

California. Dept. of Public Health.

v. 15-17.



CALIFORNIA STATE BOARD OF HEALTH.

MONTHLY BULLETIN

discount'd w. Jan. 1922.
see Weekly Bulletin, v.1, no.1, Feb. 1922, p.1



The formation of standing pools of water, through leaking irrigation ditches and faulty methods of irrigation, constitutes one of the greatest factors in the development of mosquitoes and malaria in California.

q MALARIA AND MOSQUITO SURVEY

q JULY, 1919

List of Diseases Reportable by Law

| | |
|--|---|
| Anthrax | Ophthalmia Neonatorum |
| Beri-beri | Paratyphoid Fever |
| Cerebrospinal Meningitis (Epidemic) | Pellagra |
| Chickenpox | Plague |
| Cholera, Asiatic | Pneumonia (Lobar) |
| Dengue | Poliomyelitis |
| Diphtheria | Rabies |
| Dysentery | Rocky Mountain Spotted (or Tick) Fever |
| Erysipelas | Scarlet Fever |
| German Measles | Smallpox |
| Glanders | *Syphilis |
| *Gonococcus Infection | Tetanus |
| Hookworm | Trachoma |
| Influenza | Tuberculosis |
| Leprosy | Typhoid Fever |
| Lethargic Encephalitis | Typhus Fever |
| Malaria | Whooping Cough |
| Measles | Yellow Fever |
| Mumps | |

*Reported by office number. Name and address not required.

Quarantinable Diseases

| | |
|--|----------------------|
| Cerebrospinal Meningitis (Epidemic) | Poliomyelitis |
| Cholera, Asiatic | Scarlet Fever |
| Diphtheria | Smallpox |
| Leprosy | Typhus Fever |
| Plague | Yellow Fever |

Section 16, Public Health Act. All physicians, nurses, clergymen, attendants, owners, proprietors, managers, employees, and persons living in or visiting any sick person in any hotel, lodging house, house, building, office, structure, or other place where any person shall be ill of any infectious, contagious, or communicable disease, shall promptly report such fact to the county, city and county, city, or other local health board or health officer, together with the name of the person, if known, and place where such person is confined, and nature of the disease, if known.

OCCURRENCE OF MALARIA AND ANOPHELINE MOSQUITOES IN NORTHERN CALIFORNIA.

By WILLIAM B. HERMS, Associate Professor of Parasitology, University of California,
and Consulting Entomologist of the California State Board of Health.

California has made remarkable strides in the control of malaria during the past ten years, having rid itself of at least sixty per cent of the disease. This is not only the result of organized effort here and there in the more highly malarial districts, but due even more largely to widespread intelligent individual action. At this rate we are encouraged to believe that the end of the next ten years will see this state practically free from malaria despite the increasing difficulties due to the multiplication of irrigation projects.

Although malaria has existed in California for at least seventy years, no systematic and concerted community effort in the control of Anophe-



FIG. 1. An old prospecting hole in Butte County adjacent to schoolhouse. A frequent prolific source of mosquitoes.

line mosquitoes was undertaken until the summer of 1910, when an anti-malaria-mosquito organization was effected at Penryn in Placer County. From this time on interest in mosquito abatement has grown apace,¹ and the need of a state-wide malaria-mosquito survey has become more apparent as a basic principle in a program for the control of malaria, the danger of which disease was so forcibly presented in 1909 by Dr. Wm. F. Snow,² then Secretary of the State Board of Health.

¹Herms, W. B., 1910. Anti-Mosquito Organization in California. California State Board of Health, Monthly Bulletin, Nov. 1910, pp. 313-317.

²Snow, Wm. F., 1909. Malaria, the Minotaur of California. California State Board of Health, Monthly Bulletin, Dec. 1909, pp. 109-112.

Many incidental collections of mosquitoes have been made in various parts of California during the past score of years by various workers, with no attempt, however, to carry out a serious systematic mosquito survey prior to 1916. The tremendous task involved in carrying out a state-wide mosquito survey is only partly measured by the 153,650 square miles of territory included within the boundaries of California,

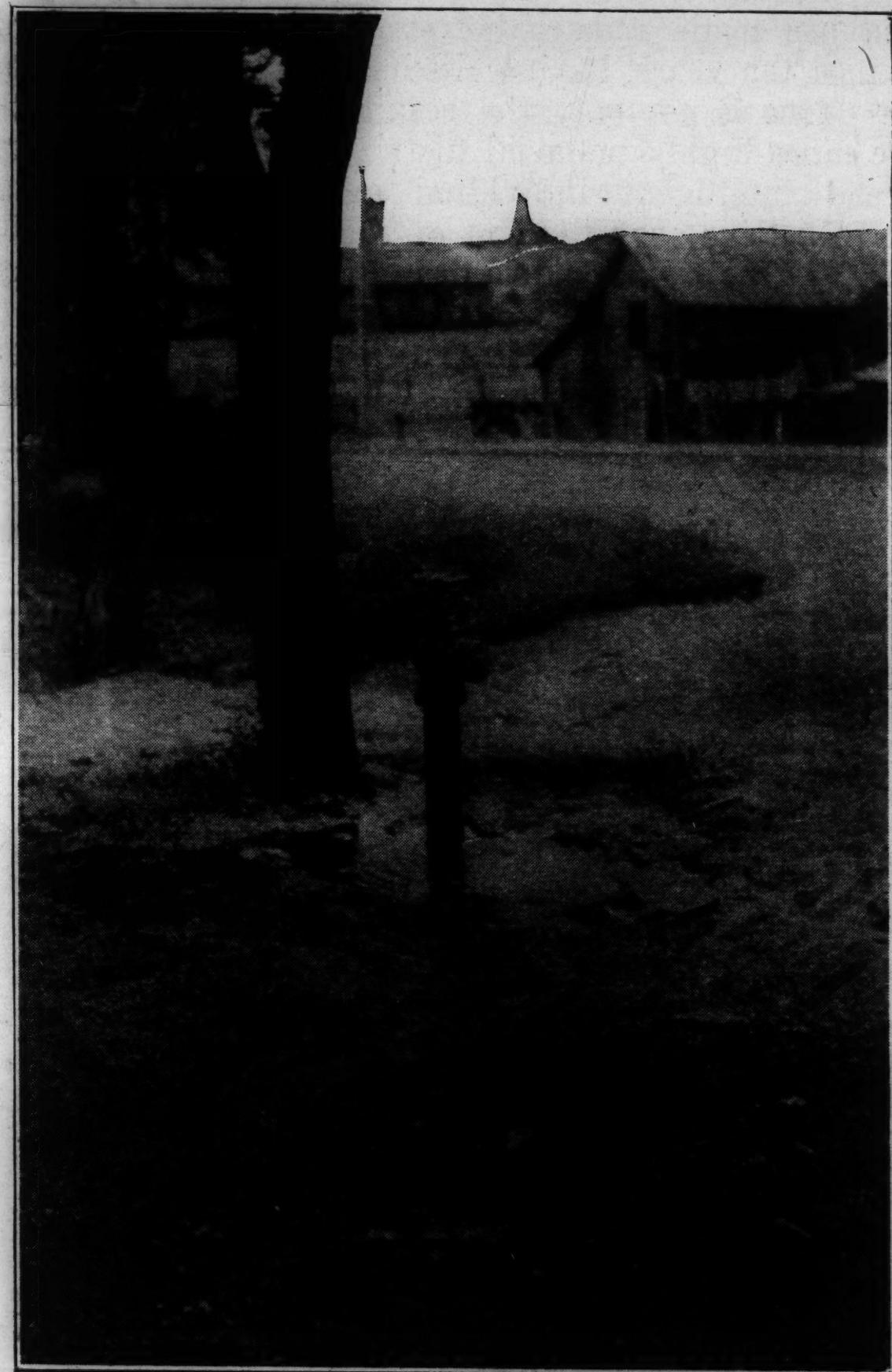


FIG. 2. A dripping irrigation hydrant, producing an apparently insignificant pool of water in which, however, Anopheline larvæ were actually taken. (Placer County.)

an area equal to the combined land surface of New York, Maine, Ohio, New Hampshire, Vermont, Connecticut, New Jersey, Delaware, and Rhode Island. In addition to this vast area there must be considered an enormous range in inhabited elevations, and widely separated communities with steep mountain ranges between.

Little progress was made until 1916, when on March 4 the State Board of Health passed the following resolution, namely, "that the State

Board of Health undertake in co-operation with the University of California, a survey of malaria and mosquitoes in California under the direction of Professor W. B. Herms, assisted by Mr. S. B. Freeborn, provided the funds of the Board will permit of the financing of the plan." It was estimated that the expense of the survey for the first summer would be approximately \$2,150, including cost of automobile, operation and repairs, hotel expenses, and general equipment, the salaries of the writer and Professor Freeborn being borne by the University of California.

"The object of the survey¹ was threefold: first, *scientific*, in that an accurate knowledge of the specific occurrence and distribution of mosquitoes and malaria was desired; second, *economic* and *remedial*, in that



FIG. 3. Pipe line carrying water for irrigation and domestic use. Numerous leaks produced ideal mosquito breeding pools. (Butte County.)

accurate information relative to the breeding places of the Anopheline species was needed in order that definite and practical suggestions for control could be offered; and third, *educational*, in so far as literature was distributed, lectures were given, conferences were held and much personal work was done among the ranchers. The objectives of the survey defined from the very start the methods pursued in our survey. The itinerary of each trip was prepared in advance and adhered to very closely. Adult mosquitoes were easily located in their hiding places during the day, commonly under bridges, in culverts and in outhouses. By the use of cyanide bottles made of shell vials (1 inch to 1½ inches deep and $\frac{3}{4}$ of an inch in diameter) representative collections were made. After collecting them they were at once placed between cotton wadding in small pill boxes, each box given a number which corresponded to a number on a map. Breeding places were then located, descriptions were

¹Herms, W. B., 1917. A State-Wide Malaria-Mosquito Survey of California. Jour. Econ. Entomology. Vol. 10, No. 3, pp. 359-370.

made and photographs taken in many instances. Ordinarily this peculiar performance attracted attention and soon one or more individuals were being told the object of our work. Health officers and other public officials were frequently taken into the field and given lessons in the recognition of mosquito larvæ, particularly the Anophelines, and were given suggestions for control. In nearly all communities resident physicians were consulted relative to the occurrence of malaria in the vicinity and blood smears were examined wherever available. Public lectures, previously scheduled, were frequently given, usually illustrated



FIG. 4. Low water in small stream responsible for Anophelines invading community within easy striking distance in Tehama County. No other prolific source was observed in that neighborhood.

with local material. Perhaps the most noteworthy lecture given during the summer was that at Redding before the state convention of county supervisors. This was well attended and evidently well received. Hundreds of copies of the State Board of Health Special Bulletin No. 9 on 'Malaria and Mosquito Control,' by the writer, were distributed. In most of the seriously infested localities a house to house distribution was made."

Motor transportation was used, and a complete equipment was carried consisting of maps, including topographic maps, collecting outfits, pill boxes, and vials, microscope, stain, slides, cameras and personal effects. The work of the first summer (1916) was greatly accelerated by the assistance of four advanced students who furnished their own motor transportation and living expenses, receiving university summer session

credit. The summer's work began April 13 and ended August 14, covering a total of 7,036 miles in thirty-one northern California counties. The highest elevation reached was about 8,000 feet in the Sierra Nevada Mountains. "We had encountered rain, hail, snow, storm, heat and cold, often subjected to dangers and hardship, but we had visited the home of the mosquito and has seen at first hand conditions good and bad as they actually exist."¹

The itinerary² of the first summer's work included, first, the San Francisco Bay region south to Palo Alto, thence northeasterly into the Vaca Valley, thence from Davis and Woodland, on both the west and



FIG. 5. Malaria-mosquito survey party stopping on a country road to examine a blood smear from a rancher.

east sides of the Sacramento, including Sacramento, Yolo, Sutter, Yuba, Glenn, Tehama and Shasta counties, proceeding thence northward from Redding to Dunsmuir, Yreka, and Hornbrook over the Siskiyou Mountains to Ashland (Oregon), thence easterly to Klamath Falls, and directly south into California again through Modoc, Lassen, and Plumas counties, easterly into the State of Nevada (Reno), westerly into Sierra County (California), southerly through Nevada, Placer and El Dorado counties. The final trip of the season included the counties bordering the Pacific from Marin to Del Norte.

During the summer of 1917 the work of the survey was carried into middle and southern California, interrupted, however, by frequent demands for inspection of military camps in various parts of the state. The summer of 1918 saw the work of the survey held in complete abeyance, both Freeborn and the writer having accepted commissions in the army in the meantime. A completion of the state survey is contemplated during the summer of 1919.

For purposes of convenience in publishing this report, all counties north of and including the following are classed northern California,

¹Herms, W. B., 1916. Progress report on state-wide mosquito survey. California State Board of Health, Monthly Bull. Vol. 12, No. 4, pp. 192-196.

²Herms, William B., 1917. A State-Wide Malaria-Mosquito Survey of California. Loc. cit. pp. 366-67.

TABLE 1.

Showing occurrence and distribution of Anopheline mosquitoes in northern California,
based on results of malaria-mosquito survey made in 1916 and 1917.

| | Total per cent of Anophelines pseudopunctipennis | Total per cent of Anophelines punctipennis | Total per cent of Anophelines quadrivittatus | Total per cent of Anophelines | Total number of Anophelines pseudopunctipennis | Total number of Anophelines punctipennis | Total number of Anophelines quadrivittatus | Total number of Anophelines | Total per cent death rate per 100,000 (average for ten years) | Annual malaria death rate per 100,000 (average for ten years) |
|--|--|--|--|----------------------------------|--|--|--|--------------------------------|--|--|
| Sacramento Valley counties— | | | | | | | | | | |
| Butte ----- | 22 | 168 | 98 | 59 | 24 | 15 | 58 | 60 | 24 | 16 |
| Colusa ----- | 25 | 295 | 142 | 128 | 0 | 14 | 43 | 90 | 0 | 10 |
| Glenn ----- | 18 | 212 | 123 | 106 | 3 | 14 | 58 | 83 | 2 | 12 |
| Sacramento ----- | 7 | 83 | 60 | 49 | 3 | 8 | 72 | 82 | 5 | 13 |
| Solano ----- | 7 | 125 | 10 | 1 | 6 | 3 | 8 | 10 | 60 | 36 |
| Sutter ----- | 8 | 95 | 80 | 77 | 1 | 2 | 84 | 93 | 1 | 3 |
| Yolo ----- | 4 | 58 | 18 | 13 | 1 | 4 | 21 | 72 | 5 | 23 |
| Yuba ----- | 6 | 30 | 29 | 27 | 0 | 2 | 97 | 93 | 0 | 7 |
| Tota's ----- | 97 | 1,069 | 560 | 460 | 38 | 62 | 52.7 | 82.1 | 6.8 | 11.1 |
| Northern mountain counties— | | | | | | | | | | |
| Shasta ----- | 15 | 109 | 67 | 26 | 5 | 33 | 61 | 39 | 7 | 54 |
| Siskiyou ----- | 8 | 128 | 43 | 42 | 1 | 0 | 31 | 97 | 3 | 0 |
| Tehama ----- | 14 | 107 | 58 | 52 | 5 | 1 | 51 | 90 | 8 | 2 |
| Tota's ----- | 27 | 344 | 168 | 120 | 11 | 37 | 48.8 | 71.4 | 6.6 | 22.0 |
| Sierra counties— | | | | | | | | | | |
| El Dorado ----- | 8 | 50 | 25 | 2 | 18 | 5 | 50 | 8 | 72 | 20 |
| Nevada ----- | 11 | 80 | 47 | 2 | 40 | 5 | 59 | 4 | 85 | 11 |
| Placer ----- | 18 | 127 | 59 | 10 | 35 | 14 | 47 | 17 | 60 | 23 |
| Plumas ----- | 4 | 14 | 5 | 5 | 0 | 0 | 36 | 100 | 0 | 0 |
| Sierra ----- | 7 | 59 | 3 | 3 | 0 | 0 | 5 | 100 | 0 | 0 |
| Totals ----- | 48 | 330 | 139 | 22 | 93 | 24 | 42.1 | 15.8 | 63.9 | 17.3 |
| Plateau counties— | | | | | | | | | | |
| Lassen ----- | 10 | 125 | 6 | 6 | 0 | 0 | 5 | 100 | 0 | 0 |
| Modoc ----- | 5 | 114 | 22 | 22 | 0 | 0 | 19 | 100 | 0 | 0 |
| Totals ----- | 15 | 239 | 28 | 28 | 0 | 0 | 11.7 | 100 | 0 | 0 |
| Inland coast valley counties— | | | | | | | | | | |
| Contra Costa ----- | 7 | 57 | 2 | 2 | 0 | 0 | 3 | 100 | 0 | 0 |
| Lake ----- | 3 | 24 | 14 | 8 | 1 | 5 | 58 | 57 | 7 | 36 |
| Napa ----- | 4 | 72 | 21 | 0 | 5 | 16 | 29 | 0 | 24 | 76 |
| Totals ----- | 14 | 153 | 37 | 10 | 6 | 21 | 24.2 | 27 | 16 | 57 |
| Coastal counties (exclud- ing San Francisco)— | | | | | | | | | | |
| Alameda ----- | 41 | 265 | 4 | 0 | 3 | 1 | 2 | 0 | 75 | 25 |
| Del Norte ----- | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Humboldt ----- | 4 | 14 | 3 | 1 | 2 | 0 | 21 | 33 | 67 | 0 |
| Marin ----- | 5 | 113 | 15 | 8 | 3 | 4 | 13 | 53 | 20 | 27 |
| Mendocino ----- | 9 | 83 | 71 | 8 | 2 | 61 | 85 | 11 | 3 | 86 |
| San Mateo ----- | 4 | 42 | 6 | 0 | 0 | 6 | 14 | 0 | 0 | 100 |
| Sonoma ----- | 12 | 110 | 17 | 3 | 0 | 14 | 16 | 18 | 0 | 82 |
| Trinity ----- | 2 | 9 | 4 | 1 | 1 | 2 | 44 | 25 | 25 | 50 |
| Totals ----- | 78 | 637 | 120 | 21 | 11 | 88 | 18.8 | 17.5 | 9.1 | 73.4 |
| Grand total ----- | 289 | 2,769 | 1,052 | 631 | 159 | 232 | 38 | 62.8 | 15.1 | 4.9 |

namely, San Mateo, Alameda, Contra Costa, Sacramento and El Dorado—a total of thirty.

Although no preference was made in collecting mosquitoes, this report will deal only with the Anophelines, and in order to correspond more or less with the accepted faunal areas of the state the following arbitrary grouping of counties has been made:

- A. Sacramento Valley Counties—Butte, Colusa, Glenn, Sacramento, Solano, Sutter, Yolo, Yuba.
- B. Northern Mountain Counties—Shasta, Siskiyou, Tehama.
- C. Sierra Counties—El Dorado, Nevada, Placer, Plumas, Sierra.
- D. Plateau Counties—Lassen, Modoc.
- E. Inland Coastal Valley Counties—Contra Costa, Lake, Napa.
- F. Coastal Counties—Alameda, Del Norte, Humboldt, Marin, Mendocino, San Francisco, San Mateo, Sonoma, Trinity.

SUMMARY AND CONCLUSIONS.

Of a total of 796 deaths in California due to malaria reported by the State Board of Health during the ten years from 1909 to 1918, inclusive, 467 or 58.7 per cent occurred in the northern third of the state as



FIG. 6. Malaria-mosquito survey party examining mosquito larvæ breeding in a borrow pit in a rice field early in the spring before planting. (Glenn County.)

enumerated above. The average annual mortality rate for the state in these ten years was 2.93 per 100,000, while for the northern third it was 3.7 for the same period, or exclusive of San Francisco, where only imported cases occurred, it was 4.9. No doubt the great majority of the San Francisco cases originated in the territory included in this report, although some San Joaquin Valley cases almost certainly are included, which number would not, however, materially alter the rate in the face of the large population. A marked decrease in the malaria death rate for the state has taken place in this period, namely, from 4.85 per 100,000 in 1909 with a total of 112 deaths, to 1.79 in 1918 with a total of 56 deaths, a decrease of 63 per cent in ten years.

Considering only counties with a high malaria rate, the following show a notable reduction based on five-year periods, comparing the years 1909–1913, inclusive, and 1914–1918, inclusive, namely: Placer County shows a reduction of 85 per cent, Tehama 76 per cent, Sacramento 71 per

cent, Butte 70 per cent, Yolo 70 per cent, and Yuba 63 per cent. It is of interest to note that the first organized malaria mosquito crusades in the state were inaugurated in Placer, Tehama and Butte counties.¹ Much of the good accomplished in Sacramento, Yolo and Yuba is attributable to individual effort under the able leadership of county and city health officers, farm advisers, aided by numerous lectures and conferences on the part of the writer and others. This actually means that there have been about 125 lives saved in that period and no doubt over 50,000 cases of malaria were prevented in these six counties alone in these ten years.

More than 50 per cent of all the mosquitoes collected during the survey of northern California were taken in the three divisions (Sacramento Valley, northern mountain and Sierra counties), where has



FIG. 7. An irrigation ditch appropriated by hogs which fortunately, because of their disturbances, rendered that part of the ditch free from mosquito larvæ. The ditch outside the fence was teeming with larvæ. (Sutter County.)

occurred about 80 per cent of all the malaria, *i. e.*, in sixteen out of thirty counties. This is not startling, but when it is known that about 50 per cent of these mosquitoes were Anophelines and that 80 per cent of these were *Anopheles quadrimaculatus* and *Anopheles punctipennis*, efficient carriers of malaria, then it is clear that we have the key to the situation—two out of every five mosquitoes captured were at least potential carriers of malaria.

In the Sacramento Valley counties 52.7 per cent of all mosquitoes collected were Anopheline, with 82.1 per cent *A. quadrimaculatus* and 6.8 per cent *A. punctipennis*. In the northern mountain counties, practically a continuation of the Sacramento Valley in its faunal relations, 48.8 per cent were Anopheline, of which 71.4 per cent were *A. quadrimaculatus*, and 6.6 per cent *A. punctipennis*. In the Sierra counties 42.1 per cent were Anophelines, with *A. punctipennis* the predominant species (66.9 per cent), and *A. quadrimaculatus* second (15.8 per cent).

¹Herms, W. B., 1913. Malaria, Cause and Control. Macmillan Co., N. Y. XI, 163 pp. See pages 81-138 for description of early work in Placer, Butte and Tehama counties.

The remaining species of *Anopheles* (*A. pseudopunctipennis*) ranged from 11.1 per cent of the total Anophelines in the Sacramento Valley to 22 per cent in the northern mountain counties with 17.3 per cent in the Sierras.

Anopheline mosquitoes occurred much less abundantly in the coastal and inland coastal valley counties, 18.8 per cent for the former and 24.2 per cent for the latter, with *A. pseudopunctipennis* the predominant species, *i. e.*, 73 per cent of all Anophelines were *A. pseudopunctipennis* in the coastal counties and 57 per cent in the inland coastal valley counties. Malaria is very rare in these counties, the table above showing an average annual rate of .9 per 100,000 in the former and 1.4 per 100,000 in the latter. Thus it would appear that *Anopheles pseudopunctipennis* is either a very weak carrier of malaria or is not a carrier at all.

This conclusion is supported by the results of numerous mosquito collections made in every coastal county to the Mexican border.

In this report *Anopheles occidentalis* Dyar and Knab, has been included with *A. quadrimaculatus*, and for the purposes of this paper simply regarded as a variety of the latter. It is interesting in this connection to note that in the vast majority of *A. quadrimaculatus* collected in California no differences can be detected when compared with eastern specimens, many of which the writer collected during the summer of 1918. It is agreed, however, that specimens corresponding more or less perfectly with the descriptions of *A. occidentalis* have been collected in California, particularly in the coastal counties and here and there in other parts of the state. This is apparently a melanotic variety of *A. quadrimaculatus*, a matter with which this report, however, has not immediate concern.

THE HEALTHY WORKER FIGHTS DISEASE.

The average American worker in a trade, business or profession dies twenty years before he should. Figuring the average earning capacity of a normal man at \$2,000 a year, which is a low estimate, the worker thus deprives his family of a total income of \$40,000 because of premature death. While he lives, he spends hundreds of dollars needlessly on medicines, prescriptions, treatments, consultations, that could have been avoided if he had known how to take care of his health. And every year he loses an average of about two weeks from his work—a loss that he has to pay unjustly, or that his employer has to pay more unjustly. The average man is about 25 per cent efficient. He could be 50 per cent efficient—could double his present earning power, if he learned to eat, dress, bathe, exercise, work, sleep, rest and think, to the best advantage.

There is no longer need or excuse for ignorance on health matters. You can learn at home, for little or nothing, how to lengthen and strengthen your life to a point of supreme vitality, productivity, happiness and usefulness. There are national organizations that specialize in teaching you the modern science of personal hygiene. Whoever is unhappy is unhealthy. A man can not be violent and virile both at the same time. The strong man does not complain; he commands. You should be ashamed to be discontented, for discontent always proves disability.—*Edward E. Purinton.*

THE MILK CONSUMER'S RESPONSIBILITY.

This is the time of year for health officials to warn consumers regarding the care of milk in the home. The responsibility of the dairyman and the health department ceases when the milk has been delivered to the consumer. With an efficient health department, there is a good assurance that the product is safe, clean and pure. It is practically impossible, however, for the board of health to supervise the care of the milk after it reaches the consumer. The housewife must assume responsibility for this. Many complaints of bad milk have been laid at the doors of the producers when housewives themselves were to blame. Some of these were no doubt due to ignorance or carelessness in the handling of the milk after it reached the home. The housewife should know the value of milk and its products as food, the source and record of her milk supply, and the care of milk after it reaches the home. The board of health should be able to inform her regarding the source and quality of the product.

The consumer should accept no system of delivery which does not bring milk into the home in bottles. All other methods of handling and delivery are obsolete and represent ignorance or carelessness on the part of the dairyman.

There are four general conditions to avoid in handling milk in the home:

1. Placing milk in unclean utensils.
2. Exposing milk unnecessarily to the air.
3. Failure to keep milk cold up to time of using.
4. Exposing milk to flies.

Whenever possible milk should be kept in the original container. After the cap on the bottle is removed, another made of paper may be used or the mouth of the bottle may be covered with an inverted drinking glass. The pouring of milk from the bottle to another container, usually not thoroughly clean, means the addition of bacteria and quicker spoilage of the product. Milk should not be poured from the original container unless it is to be used immediately. Exposure of milk to the air means an increase in bacteria and in foreign material. It also means the absorption of odors from unclean refrigerators and from such foods as fish, cabbage, or onions. It is the duty of dairymen to deliver milk cold. Unless the housewife receives the milk personally when delivered, she should have an insulated porch box for holding the milk and keeping it cold. A simple inexpensive arrangement can easily be made by placing a small box or tin pail inside another larger box or pail and filling the space between with sawdust. A tight fitting cover, insulated with newspaper, should be made. Keep the bottle of milk in the refrigerator and remove only for immediate use. Under no circumstances should milk be exposed to flies. The presence of flies in milk not only makes it filthy, but exposes the person who drinks it to the possible danger of contagious disease.—*U. S. Dept. of Agriculture, Bureau of Animal Industry, Dairy Division.*

THE CHILD'S HANDICAP.

Ten per cent of American Children have Adenoids.

Adenoids are handicapping more than 10 per cent of the American children in attaining normal, healthful development to manhood, according to a recent extensive survey in population centers conducted by the United States Public Health Service.

The results of the medical examinations conducted by the draft boards indicate that a considerable proportion of the defects there discovered were unquestionably due to the failure of parents to pay proper attention to the physical defects in young children. Excluding defective teeth, experience throughout the country shows that adenoids are among the most frequent of the physical defects in children.

Adenoids may be prevented, or cured after development. As one of its contributions to improve the nation's health and strengthen its manhood the Public Health Service has prepared a booklet on adenoids for distribution to parents and school authorities.

It tells the parents how the first appearance of adenoids may be detected by the labored mouth-breathing of the child, particularly while sleeping. Since nature intended that we should breathe through the nose, a provision by which the air thus breathed is purified and warmed before entering the lungs, it is evident that mouth-breathing results in impurities getting into the air passages. The dangers of this alone are many, but there are others, often grave ones. The child with adenoids is almost invariably underweight, hollow chested and stoop shouldered, due to the labored breathing. Facial deformity is another result. The upper teeth protrude, are crowded out of shape and become a fertile field for the development of Riggs disease. The children suffer from frequent colds, develop chronic nasal catarrh and sometimes lose the sense of smell and hearing.

Following adequate treatment improvement is marked. The child begins to regain the lost weight, acquires a healthy color and very soon is the normal person nature intended it to be.

FACTS ABOUT CANCER.

Cancer is unquestionably increasing throughout the world.

At the beginning cancer is usually painless and difficult to detect.

At its first small growth it can be safely and easily removed by a competent surgeon.

Cancer is not a constitutional, or "blood" disease.

Cancer is not contagious.

Cancer is, practically speaking, not hereditary.

Every lump in the breast should be examined by a competent doctor.

Persistent abnormal discharge or bleeding is suspicious.

Sores, cracks, lacerations, lumps, and ulcers which do not heal, and warts, moles, or birthmarks which change in size, color, or appearance, may turn into cancer unless treated and cured.

Probably 60 per cent of cancers of the rectum are first regarded as piles. Insist on a thorough medical examination.

Continued irritation in some form is the usual cause of cancer. It rarely results from a sudden injury.

A doctor who treats a suspicious symptom without making a thorough examination does not know his business.

TEN SUGGESTIONS FOR MILK CONSUMERS.

Keep Milk Clean, Covered, and Cold.

1. Buy only the best milk obtainable. It is cheapest in the long run.
2. Consult the health department before selecting your milk dealer.
3. Buy only bottled milk if possible. Dipped milk is often dirty and deficient in cream.
4. Take milk into the house as soon as it is delivered, and place it in the refrigerator immediately. Bacteria increase rapidly in milk which stands in the sun or warms up, and such milk will sour quickly.
5. Keep milk in the original bottle in the refrigerator until the moment of serving. Milk which has been poured from the bottle should not be returned to it.
6. Keep the bottle covered with a paper cap or an inverted tumbler, to prevent the entrance of flies and dust, which may carry dangerous bacteria into the milk.
7. Keep the refrigerator clean and sweet by means of proper drainage and frequent washing with scalding water and sal soda, since milk quickly absorbs unpleasant odors and becomes less palatable.
8. Wash milk bottles as soon as emptied, by rinsing first with luke-warm water and then with hot water. If there is an infectious disease in your house, do not return any bottles except with the knowledge of the health department and under conditions which it may prescribe.
9. Return empty bottles promptly, and do not use them for anything except milk. Remember that they are the property of the dealer and represent cash.
10. Remember that clean milk, properly cared for, is one of the best foods obtainable. It is nourishing, digestible, and usually economical.

Keep milk clean, covered, and cold.

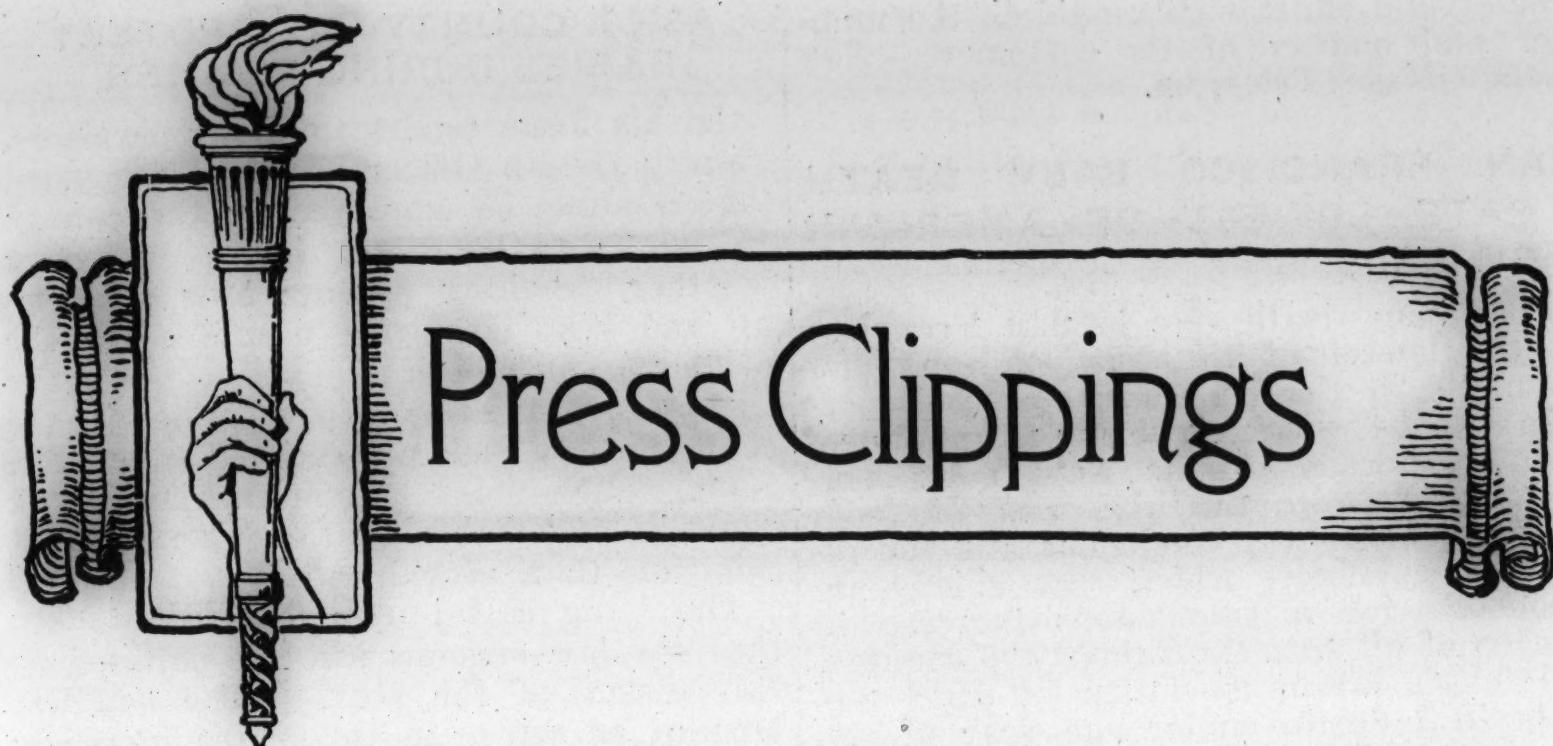
HOT WEATHER AND BABIES.

Although mothers generally know that summer is a dangerous time for young infants, many do not understand that the heat by itself is one of the chief sources of danger. So much has been said about the care of the milk in hot weather, and about the role played by flies in the transmission of diarrhoeal disease that frequently insufficient attention is paid to keeping the infant cool.

The infant's clothing should always be adapted to the weather. On very hot days the less clothing the better. Usually a diaper and a light slip will answer. The practice of using rubber diapers should be discouraged for these retain heat and moisture and readily cause trouble. Frequent bathing is excellent. When tepid water is used it not only cleans the skin of offensive and irritating perspiration, but cools the body and improves its tone.

Overfeeding should be avoided. Experience has shown that excessive hot weather reduces the tolerance for foods. The mistake is often made of relieving the infant's thirst by excessive quantities of milk. Mothers should remember that in hot weather infants require water to drink in addition to their milk feeding.

Out of doors in the shade is usually the best place for infants in hot weather. But care should be taken in the choice of places, and at times it may be that the infant can be made more comfortable in a room with the blinds closed.



Press Clippings

PUBLIC HEALTH AND THE RIGHTS OF INDIVIDUALS TO DISREGARD IT.

The war, with its cost of millions of lives, is over. The war to prevent the unnecessary loss of as many millions by disease is steadily growing more widespread.

We all have to die, and most of us have to be sick. No campaign for public health, no advance in medical science, is going to change those facts. But we can live longer on the average and we can suffer less, and we can be steadily more effective in a physical way, than we are now. We can if we choose.

Compulsory vaccination still is regarded by many as tyranny. Compulsory quarantine is still evaded by some on principle.

But by and large, we have adopted the principle that individual health is a proper matter for community and national oversight. And there will be found few who will not admit that social investigation of the causes and spread of disease is essential.

What we do not know is amazing in its area. In the case of influenza the doctors were practically helpless. Along came a germ which was apparently very similar to two other germs, the action of which is well understood; and it swept away in two months more than twice as many lives, in our camps alone, as the explosives and exposure of war took of our soldiers.

And yet, what we do know is still more remarkable. We have practically rid our armies of typhoid. We have entirely rid them of smallpox. We have made malaria an incident; it used to be a pestilence. We have checked infantile paralysis in its early stages; it might easily have been a desperate scourge.

And we are today spending a great deal more money and intelligence than ever before on the investigation of disease. There are fifty organizations to one, a thousand dollars available compared to every one, for such investigation half a century ago.

The war has made us see more clearly than ever the necessity of conserving the most valuable things in the world—life and health.

Our growing interest in public health will not fetch on the millennium, any more than our growing knowledge of public economics; but it is a good sign, and we may honestly rejoice in it.—*Los Angeles Examiner*.

CLEAN SODA FOUNTAINS.

A timely campaign is being carried on in a good many localities to insure that soda fountains and all their appurtenances are kept clean and sanitary. This is a most necessary proceeding, for the spread of disease by means of improperly sterilized dishes and silver is an old story. At this season the soda fountain is a busy place, and it is a great temptation to slight the proper cleansing of dishes and spoons. A hasty rinse in cold water, a quick polish with a rag none too clean, and the deed is done.

Such emergency measures are not enough if the health of the community is to be protected. All dishes which are used repeatedly must be washed in boiling hot water after each using and left in the boiling water or steam for at least three minutes if all danger of germ-carrying is to be avoided. Wiping cloths must be immaculate.

Of course the use of paper ice cream saucers and soda cups is a partial solution of the problem, but this still leaves the spoon to do its deadly work, and it is most likely to be infected since it goes into the mouth of the consumer.

Spoons of good appearance and good wearing qualities can be bought for a trifle nowadays, and it is a simple matter to have so plentiful a supply as to allow for every one being subjected to the sterilizing bath before it is used a second time.

The soda fountain which can advertise such particular cleanliness, and prove it to the health officer and the interested customer, will find all its outlay of time,

money and effort well repaid in the number and quality of its customers.—*San Luis Obispo Telegram*.

SAN FRANCISCO BABY DEATH RATE LOWEST OF AMERICAN CITIES.

The baby death rate in San Francisco is the lowest of the cosmopolitan communities in the United States and, perhaps, in the world, according to announcement yesterday by the New York committee. Despite the high cost of food-stuffs, general war conditions and the influenza epidemic, which was chiefly responsible for a tremendous increase in deaths of all ages throughout the country, this city's infant mortality for 1918 was only 57.2 deaths under one year of age per 1,000 living births reported during the calendar year. The infant mortality rate in Los Angeles and Oakland was higher—the Los Angeles rate 77.4 and the Oakland rate 72.7.

For 1919 the New York committee looks for the largest baby crop in the history of the country. This prediction is made in the face of a reduction of nearly 100 per cent in the excess of births over deaths during 1918 as compared with 1917, caused by an unprecedented number of deaths approximating 2,180,000, in part due to influenza and war conditions.

Of San Francisco's remarkable showing, the committee says:

"The honor infant death rate among cities of 100,000 or more was attained this year by San Francisco, which, with a population above half a million, lowered its baby deaths from 73.6 in 1917 to 57.2. Seattle was not far behind with 63.4, although this is an increase of 4 points for this 237,000 population city. Of all the cities reporting, Reading, Pa., with a population of 100,000, presented a figure of 202.9."

Only three cities reported baby death rates below 50. These are all of the class below 50,000. Brookline, Mass., one of the five honor cities of 1917, has the lowest rate, 34.4; Madison, Wis., second, had 38.1, and Pasadena, Cal., was third, with 43.8.—*San Francisco Chronicle*.

SIDEWALK DISPLAYS STOPPED BY CITY LAW.

Sidewalk displays of merchandise in any part of the city are prohibited, as the result of an ordinance passed by the city council yesterday afternoon.

The ordinance, which was favored by the board of health, is aimed chiefly at fruit and vegetable dealers. The original ordinance allowed them two feet of space on the sidewalk, but many have been exceeding the limit, the councilmen say.

The ordinance will affect all dealers who have been using the sidewalk for display purposes.—*San Diego Union*.

ASKS COUNTY TO PROTECT BABIES DURING SUMMER.

In his June report to the supervisors, County Health Officer Long recommended that a nurse be employed by the county to go from house to house in warm weather, teaching parents how to clean up and keep clean the premises for the protection of babies.

"One out of every fifteen babies in the county needs such protection," wrote Dr. Long. "No more humanitarian work could be undertaken by the supervisors at this time than providing it."

Dr. Long called upon campers to see that the low streams are not polluted at this season of the year. "The smallest amount of refuse in the water increases the danger of pollution as the streams decline," he said. "Campers should particularly be alert to let no foreign substance reach the water. The state authorities are conducting a campaign to protect the labor camps in this regard. It is up to parents to protect their families." —*Fresno Republican*.

STERILIZATION LAW WILL BE ENFORCED.

The state is to conduct a vigorous campaign to force the sterilization of all glasses used by soft drink parlors, it was made known here today. Health Officer W. H. Marshall received word from the state health office at Sacramento to the effect that state agents would be in Chico in a few days. Marshall believes the only remedy for the evil is to do away with the glasses and use paper cups.—*Chico Enterprise*.

TO CONDEMN FRUIT MENACED BY FLIES.

Wholesale condemnation of large quantities of sun-dried peaches, raisins and other fruits will result this year unless farmers install sewage systems which will eliminate the fly menace, according to Dr. G. L. Long, county health officer.

"While I do not wish to cast any remarks at the fruit produced and marketed from the San Joaquin valley, which is the cleanest and finest product in the world," declared Dr. Long, "I still must say that on certain places where fruit is put out to dry where it will be subject to the contamination of flies emanating from open toilets, condemnation by the state health inspector of entire lots of dried fruit is bound to follow."

"Toilets must be strictly fly-proof at all places where fruit is put out to dry. This rule will be enforced, and anyone violating it will have to pay the penalty." —*Fresno Republican*.

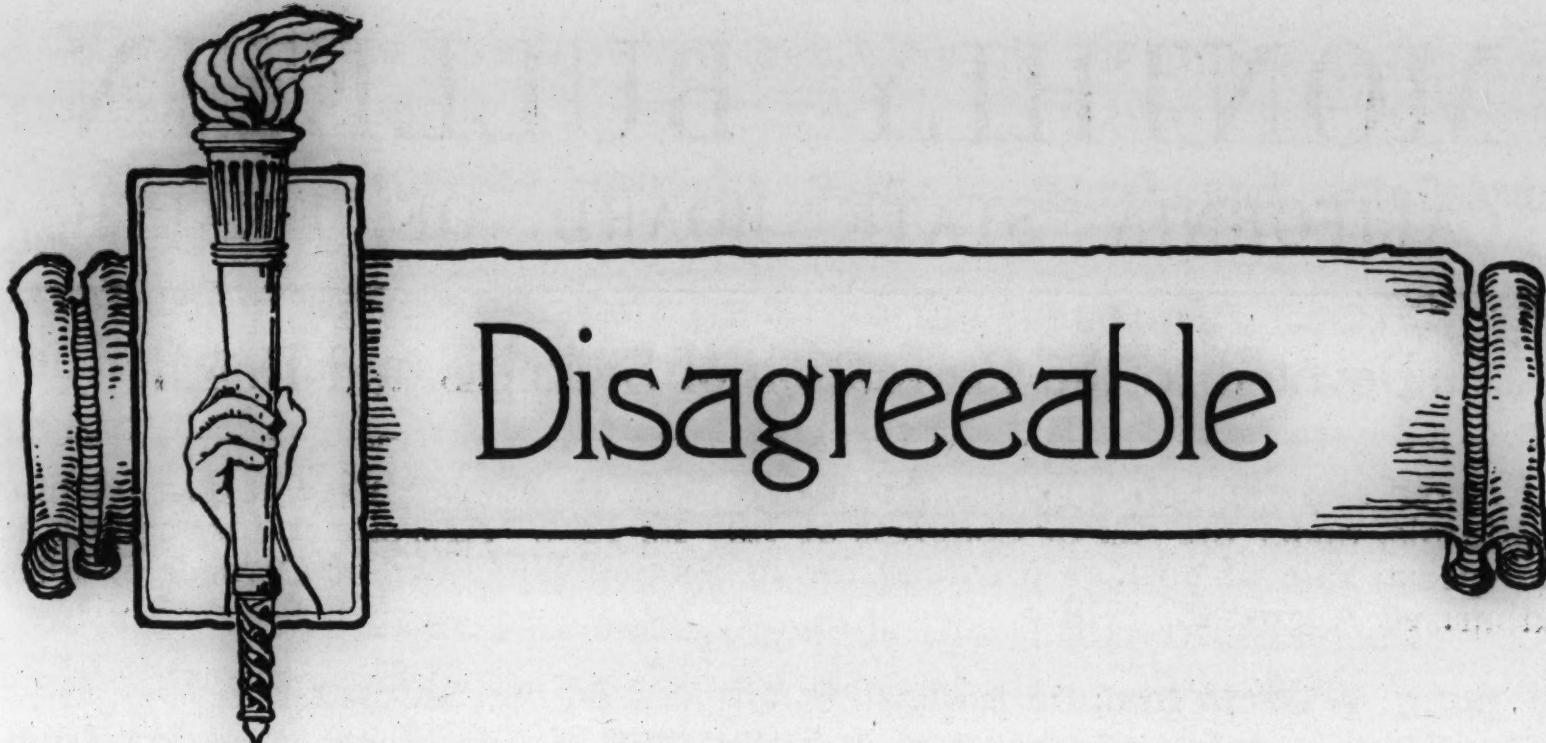


Table napkins are intended primarily to protect the clothing from misdirected particles of food and drink, but they are used more often for wiping bits of food and drink from the lips. Some restaurant patrons *wipe* their noses on table napkins, thereby saving the expense of sending their own handkerchiefs—if they have any—to the laundry. Not to be outdone in thrift, some restaurant proprietors use these soft but soiled napkins for drying dishes and glassware, which is a common, disgusting practice and which is considered typical of the sort of thing that readers may expect to find on *the disagreeable page*.

Some barbers use an individual hot towel for each customer, but others are not so particular. While it is true that most barbers give the common hot towel a very thorough mechanical cleansing after each usage, there is no absolute assurance that the cleansing is effective. It is not pleasant to sit in a barber's chair just vacated by an individual whose face is covered with a suspicious rash which may be due to poison oak or which may be due to a communicable disease. The additional expense involved in providing each patron with clean towels would be well worth while, for it would undoubtedly result in increased business. Barbers might well afford to post in their shops the legend, "Clean individual towels provided for each patron." The common towel law, Chapter 745, Acts of 1917, may be invoked for barbers who violate its provisions.

Some one should invent a soup bowl into which it will be impossible to place the thumb. Few waiters are able to serve a bowl of soup without dipping a grimy digit into the warm fluid. The first course of a meal is intended to be an appetizer. Soup is more stimulating than nourishing, but it fails to stimulate the appetite when a dirty thumb finds way into its savory depths.

Another inventor ought to provide a container for soda fountain straws to which flies may not gain access. Did you ever see a container full of straws standing on a marble counter of a soda fountain, many of the straws in which were not covered with fly specks? Straws seem to be a favorite resting place for the *musca domestica*. If soda fountain proprietors were careful to keep straws in containers with tight-fitting covers this disagreeable sight might be spared.

MONTHLY BULLETIN

CALIFORNIA STATE BOARD OF HEALTH

Devoted to the Prevention of Sickness and Death

Entered as second-class matter, August 15, 1905, at the post office at Sacramento, California, under the Act of Congress of July 16, 1894. Acceptance for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 27, 1918.

Sent free, on request, to any citizen of California.

WILFRED H. KELLOGG, M.D., Secretary Executive Officer
GUY P. JONES, Assistant to the Secretary Editor

This is the day of the child—particularly of the American child.

With the entry of the United States among the world powers, the importance of the American child has become tremendous.

Nothing in the world today is of greater moment than the development of this child of Liberty.

Upon his shoulders rests the task of perpetuating the ideals upon which the Nation was founded.

It is upon him that we must depend to keep America for the Americans.

Under the new social and political conditions his work will be no gentle pastime.

To make him fit for future responsibilities will require the provision of every attribute that makes for education and for physical well being.

By giving to the Nation strong, healthy, intelligent children California can best prove her devotion to the principles of Liberty upon which the Nation was founded and can best prove her fealty to the bonds that hold the United States in everlasting union.

EVERY CALIFORNIA CHILD HAS A RIGHT TO DEMAND THAT HE BE GIVEN EVERY OPPORTUNITY TO BE HEALTHY. HIS HEALTH IS OF PUBLIC AS WELL AS PRIVATE CONCERN.

Irving Fisher says: "One of the first symptoms of racial degeneracy is decay of foresight.

Normal, healthy men care for and provide for their descendants.

A normal, healthy race of men, and such alone, will enact the laws or develop the public sentiment needed to conserve natural resources for generations yet unborn.

When in Rome foresight was lost, care for the future generations practically ceased.

Physical degeneracy brought with it moral and intellectual degeneracy.

Instead of conserving their resources the spendthrift Romans, from the Emperor down, began to feed on their colonies and to eat up their capital.

Instead of building new structures they used the old Coliseum as a quarry and a metal mine."

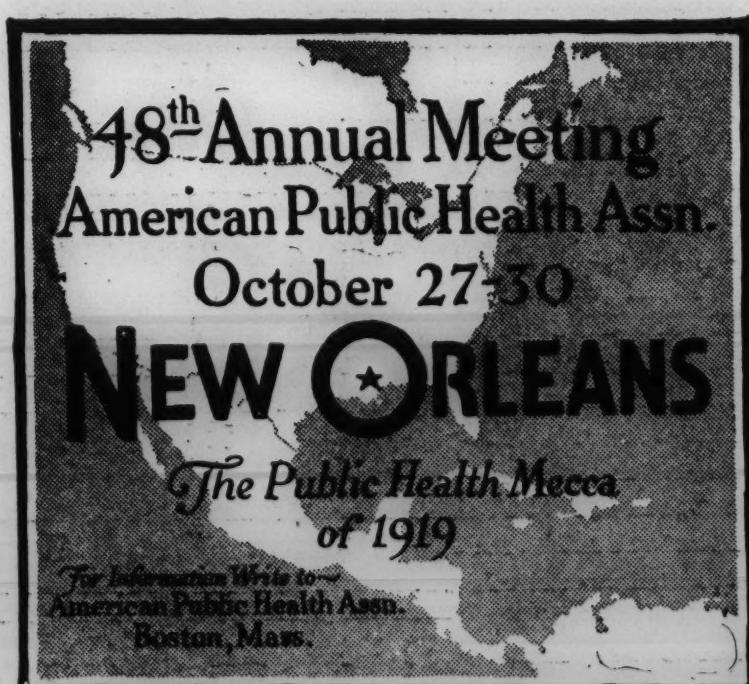
Upon us, upon our foresight, depends the future of America.

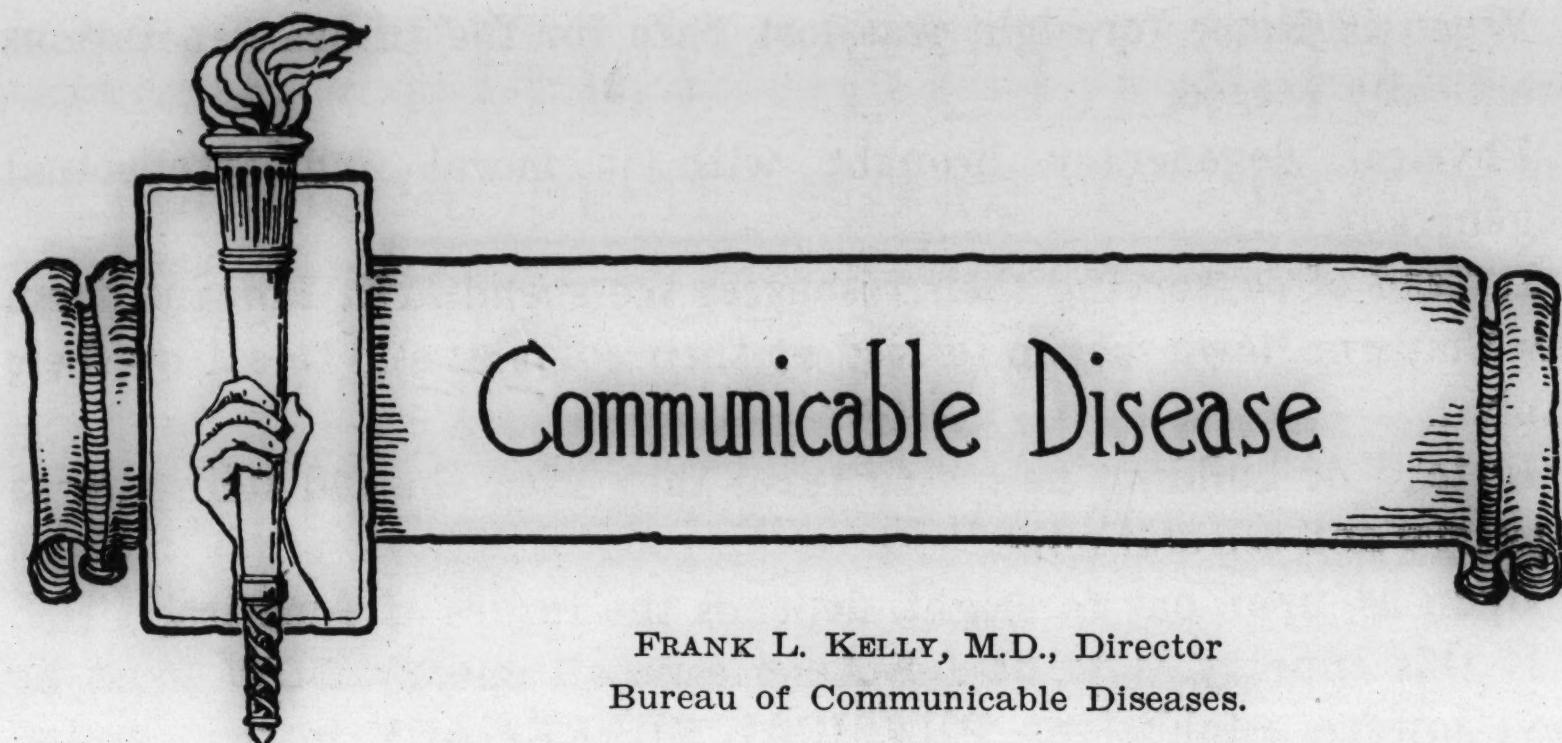
If this country is to be for Americans all energy NOW must be bent toward establishing **PHYSICAL SUPREMACY** in our coming generation.

If children of today become **PHYSICALLY SUPREME**, fit for any conquest of brains or of arms, there can be no better assurance of Peace throughout the world in the portentous years to come.

The next annual meeting of the American Public Health Association is to be held at New Orleans, Louisiana, October 27-30, inclusive. The central themes of discussion will be rural health problems, including malaria, typhoid fever, hookworm, soil pollution and the privy, etc.

The eleventh annual conference of state, county and municipal health officers will be held in Riverside, October 20-24, 1919. This meeting will be held in conjunction with the convention of the League of California Municipalities and a large attendance of health officers is expected.





FRANK L. KELLY, M.D., Director
Bureau of Communicable Diseases.

Morbidity for May, 1919, by Weeks.

L. E. Ross, Morbidity Statistician.

| | Weeks ending— | | | | Total, May, 1919 | Total, May, 1918 |
|------------------------------------|---------------|--------|--------|--------|------------------------|------------------------|
| | May 10 | May 17 | May 24 | May 31 | | |
| Anthrax ----- | 1 | ----- | 2 | ----- | 3 | 1 |
| Beri-beri ----- | | | | | | 2 |
| Cerebrospinal meningitis ----- | 3 | 5 | 1 | 2 | 11 | 24 |
| Chickenpox ----- | 118 | 104 | 128 | 172 | 522 | 681 |
| Cholera, Asiatic ----- | | | | | | |
| Dengue ----- | 34 | 41 | 47 | 29 | 151 | 289 |
| Diphtheria ----- | | 1 | 1 | 1 | 3 | 11 |
| Dysentery ----- | | 2 | 1 | 1 | 4 | ----- |
| Encephalitis, lethargic ----- | | 5 | 6 | 3 | 21 | 60 |
| Erysipelas ----- | 7 | 5 | 6 | 3 | 1 | 641 |
| German measles ----- | | 1 | ----- | ----- | 1 | ----- |
| Glanders ----- | | | | | | |
| Gonococcus infection ----- | 116 | 65 | 102 | 61 | 344 | 498 |
| Hookworm ----- | | | | | | 23 |
| Influenza ----- | 530 | 372 | 195 | 146 | 1,243 | ----- |
| Leprosy ----- | 1 | 2 | ----- | ----- | 3 | 2 |
| Malaria ----- | 8 | 5 | 1 | 11 | 25 | 53 |
| Measles ----- | 28 | 22 | 22 | 22 | 94 | 2,993 |
| Mumps ----- | 41 | 48 | 53 | 60 | 202 | 986 |
| Ophthalmia neonatorum ----- | | | | 1 | 1 | 3 |
| Paratyphoid ----- | | | | | | 1 |
| Pellagra ----- | | 2 | ----- | 1 | 3 | 3 |
| Plague ----- | | | | | | |
| Pneumonia ----- | 18 | 17 | 25 | 11 | 71 | 319 |
| Poliomyelitis ----- | | 1 | ----- | ----- | 1 | 7 |
| Rabies ----- | | | | | | |
| Rocky Mountain spotted fever ----- | | | | | | 3 |
| Scarlet fever ----- | 48 | 39 | 29 | 28 | 144 | 438 |
| Smallpox ----- | 51 | 24 | 18 | 31 | 124 | 172 |
| Syphilis ----- | 109 | 66 | 82 | 52 | 309 | 247 |
| Tetanus ----- | 2 | 1 | ----- | ----- | 3 | 2 |
| Trachoma ----- | 2 | 5 | ----- | ----- | 7 | 8 |
| Trichinosis ----- | | | | | | |
| Tuberculosis ----- | 685 | 582 | 348 | 433 | 2,048 | 810 |
| Typhoid fever ----- | 17 | 13 | 9 | 13 | 52 | 118 |
| Typhus fever ----- | | | | | | |
| Whooping cough ----- | 9 | 7 | 45 | 19 | 80 | 718 |
| Yellow fever ----- | | | | | | |
| Total ----- | 1,828 | 1,430 | 1,115 | 1,097 | 5,370 | 9,113 |

AN INVESTIGATION INTO TYPHOID FEVER AT WILLITS.

By IDA MAY STEVENS, Chief Bacteriologist.

I found that Dr. F. G. Gunn, city health officer, had attended five cases of typhoid fever during the month of February and since these cases had been in families related to the Doe family, a family in which every member had had typhoid fever, he had decided that there was a typhoid carrier in that family.

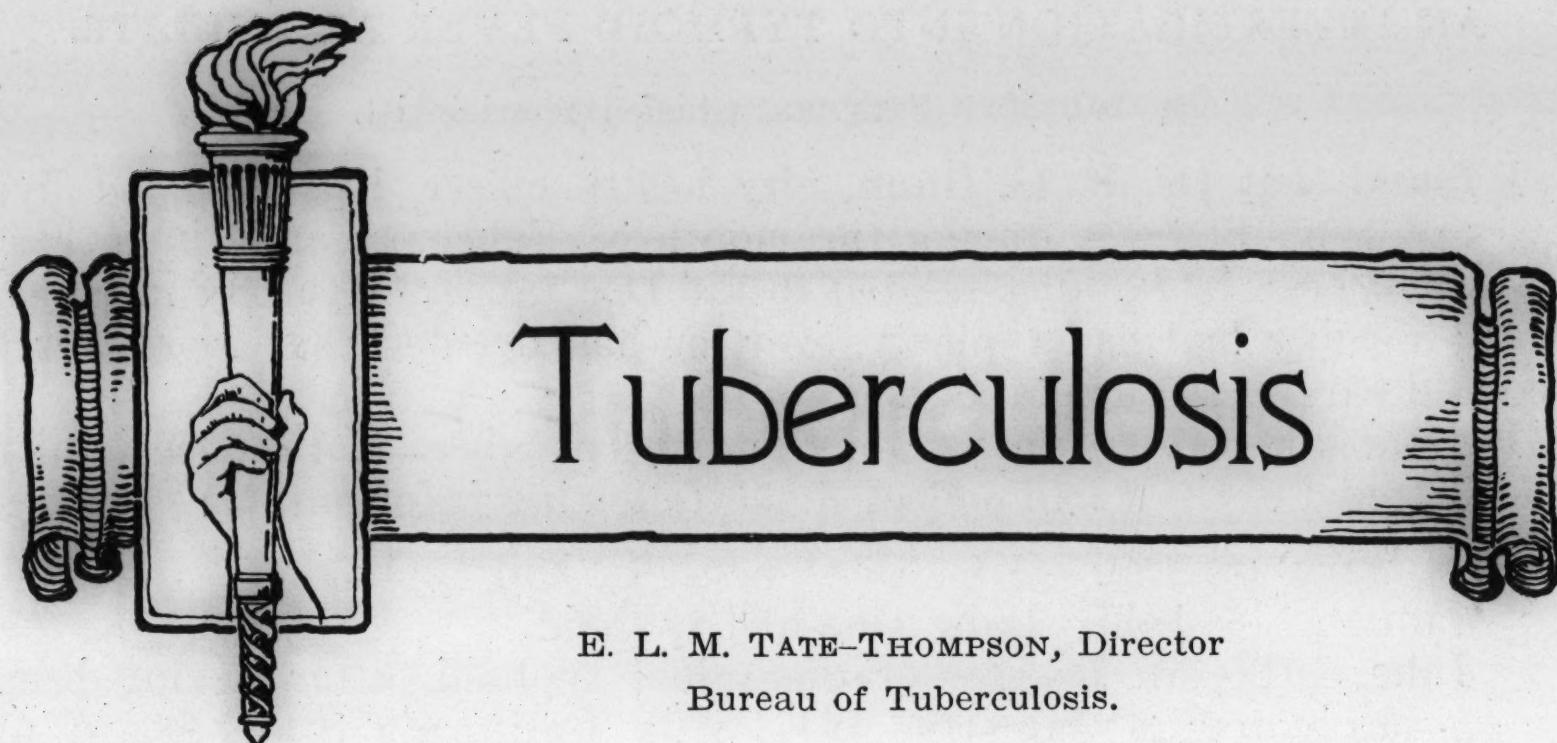
He had interviewed the patients and the members of the Doe family and before I arrived had collected the following information:

- January 16, 1917—Mrs. Doe (mother) had typhoid.
- January 16, 1917—Baby Doe had typhoid.
- June, 1917—A. B. Doe (father) had typhoid, after having been vaccinated in January, 1917, with California State Board of Health anti-typhoid vaccine.
- June, 1917—Two other children who had been vaccinated at the same time also had typhoid.
- May, 1918—The one child who had escaped the January and June outbreaks had typhoid.

Cases of typhoid among relatives with a history of visiting the Does ten days to two weeks before the attack:

1. Roe (boy), nephew, whose home was out in the country had been visiting the Doe family and just after his return home, March, 1917, had typhoid.
2. Mrs. A., Mill Valley, October, 1917, typhoid two weeks after visiting her sister, Mrs. Doe.
3. Roe (boy), nephew (brother of Roe boy who had typhoid in 1917), was staying in town with Does, attending school. Date of onset February 1, 1919.
4. John Robinson, brother of Mrs. Doe. Mrs. Doe gave the Robinson family milk on the average of twice a week and had done so in January and February. Date of onset February 10, 1919.
5. Helen Robinson, daughter of John Robinson, drank milk from Doe's. Date of onset February 10, 1919.
6. Mrs. John Robinson drank milk from Doe's. Date of onset February 10, 1919.
7. John M., cousin of Robinson, living across the street, had had one glass of milk at Robinson's about ten days before date of onset, February 16, 1919; he was the only one in his family who had had the milk and was the only case of typhoid in the M. family.

In company with Dr. Gunn I went to call on the patients and Mrs. Doe. In regard to the milk supply at the Does, I found that Mr. or Mrs. Doe always handled the milk. On a number of occasions they had sold milk to local people but there was no history of typhoid among those buying the milk. Specimens of feces were obtained from Mr. and Mrs. Doe and were brought to the laboratory. Examinations proved Mr. Doe to be a carrier. Later, specimens from each of the children were examined to be sure that there was only one carrier in the family. The result in each instance was negative.



E. L. M. TATE-THOMPSON, Director
Bureau of Tuberculosis.

A man in Santa Barbara recently wrote to the National Tuberculosis Association in New York asking where he might go for treatment. His letter was referred to the Bureau of Tuberculosis of the California State Board of Health, and a letter to him from the Director advised him to make application at Santa Barbara's beautiful new sanatorium "San Antonio," named in honor of the patron saint of those in trouble. The following is the letter received from the applicant:

GENTLEMEN :

I received your letter of June 6 several days ago and have, as you advised me, made application for admission to the San Antonio Hospital. I have been there in person and must say the place certainly looks good to me, and more, I have been promised admission.

Thanking you very much for the information which enabled me to get this great help, I am

Respectfully,

Santa Barbara.

It is unusual for a Californian to write to New York to secure information regarding a sanatorium located within his own county, but even if this roundabout way was traveled the desired results were accomplished. This incident makes the Director of the Bureau of Tuberculosis mindful of the opposition to the establishment of this county sanatorium when it was first planned some eighteen months ago. She states that if she were advertising Santa Barbara one of her advertisements would read as follows:

Located away from the center of population, this county maintains a splendid tuberculosis hospital, free to those who can not pay. Your food is not handled or served by tuberculous people as in many resort places which have no facilities to care for the sick; your clothes are not washed by them. The San Antonio Sanatorium is Santa Barbara's way of caring for its sick.

* * *

The Santa Barbara Hospital is unique in several of its features. It is to be presented, during the summer, with some splendid landscape paintings by local artists.

* * *

Every week Eastern visitors interested in medical work ask to be shown what is being done in California for the control of tuberculosis. All winter army medical officers, on leave, have visited our hospitals to

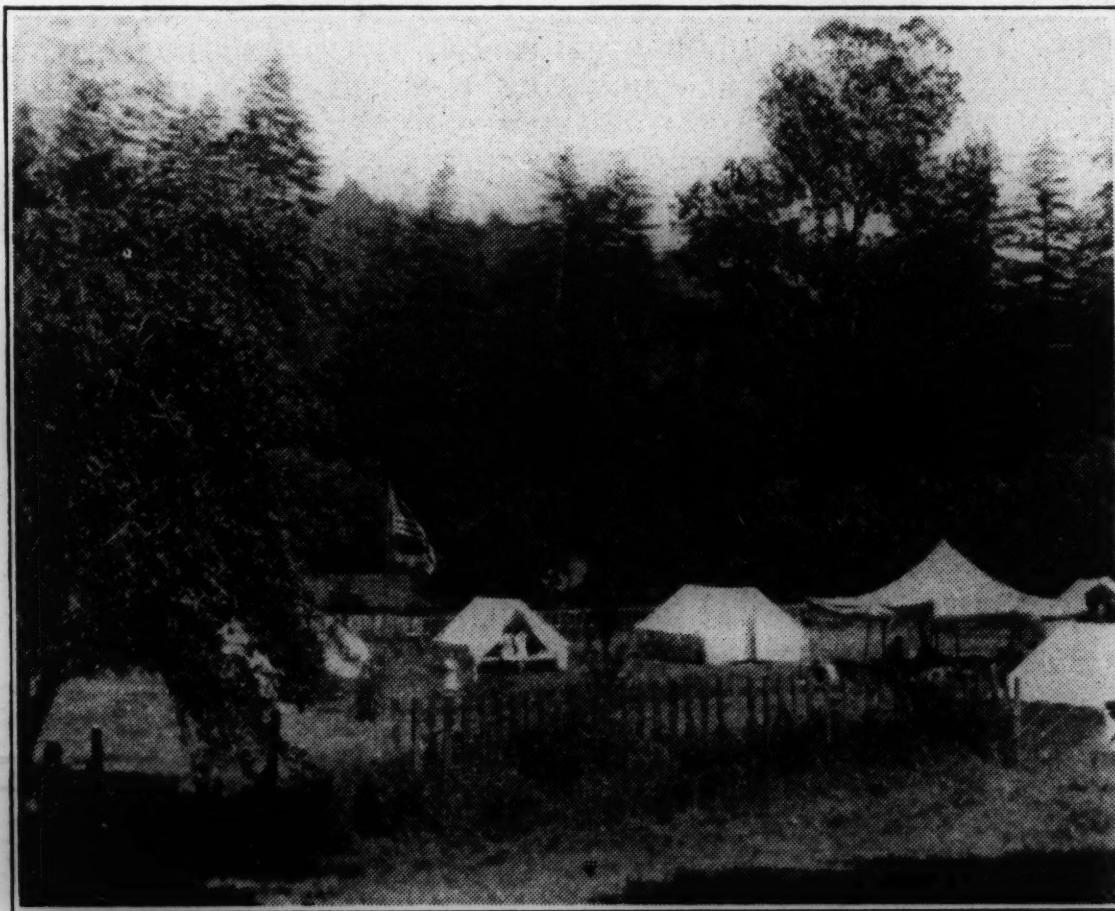
see how we are caring for the tuberculous. Chambers of commerce may well include these new institutions in their sight-seeing trips, for so seldom does the White Plague leave a family untouched that no community need be ashamed that it gives care; they need to be ashamed only of the kind of care they provide.

★ ★ *

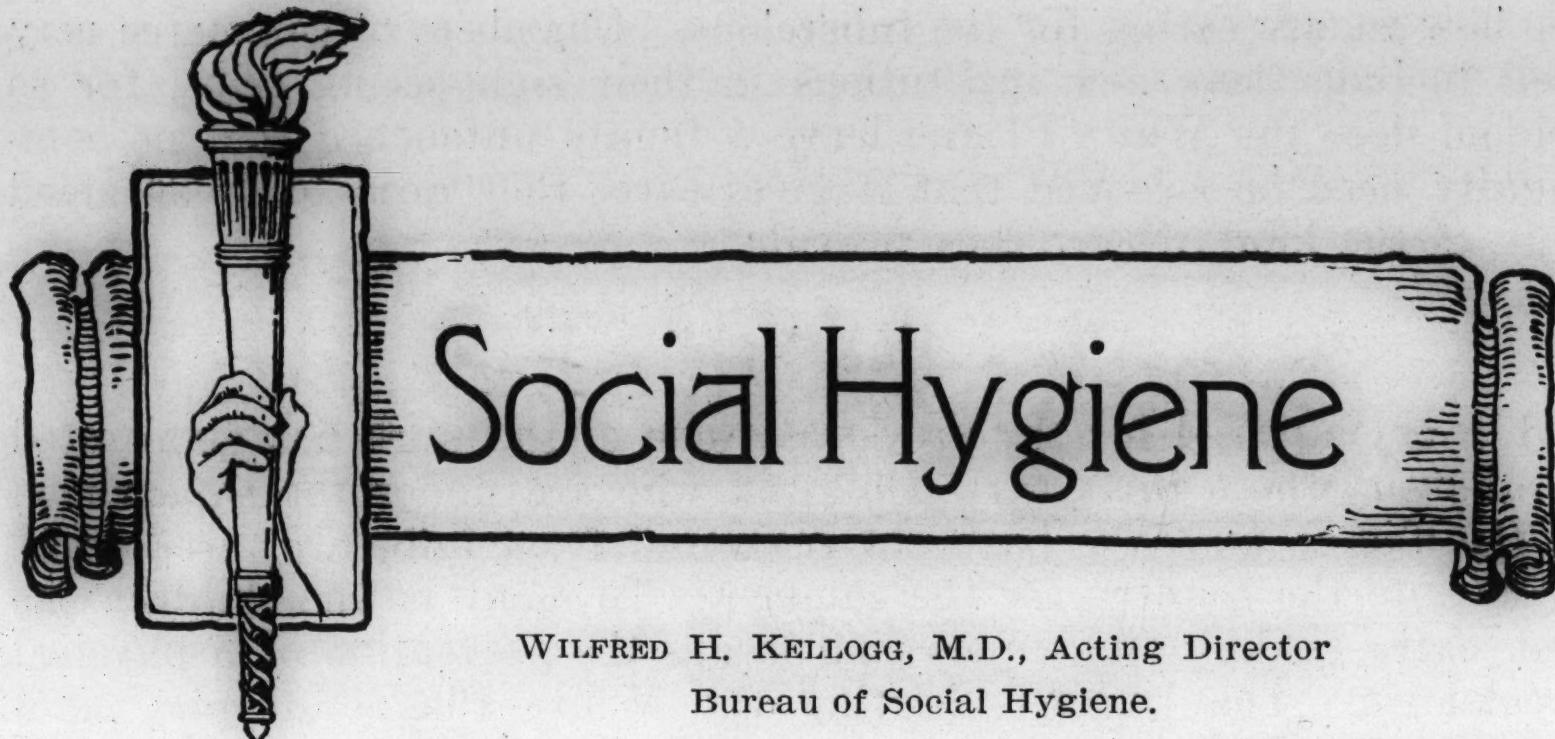
The crying need for the preventive side of the work has manifested itself everywhere this year. Children who are under the supervision of the clinics, and who have not recovered from influenza, need to be taken into the country for the summer. To many of the children the rest, extra feeding and supervision means the prevention of a physical breakdown. That means cheating the White Plague of one more victim.

★ ★ *

The Alameda County Tuberculosis Association conducted a summer camp for children this summer at Boulder Creek in the Santa Cruz mountains. Dozens of children romped in the hills and grew strong in the pure mountain air. The Sacramento County Tuberculosis Association maintained a successful summer camp for children at Colfax. Pictures of this camp will be published in the August BULLETIN.



Summer camp for children at Boulder Creek, maintained by the Alameda County Tuberculosis Association.



WILFRED H. KELLOGG, M.D., Acting Director
Bureau of Social Hygiene.

Samuel Gompers has sent the following letter to Surgeon General Blue:

WASHINGTON, D. C., June 30, 1919.

DR. RUPERT BLUE, *Surgeon General,*
United States Public Health Service,
Washington, D. C.

DEAR SIR: Permit me to bring to your attention the following preambles and resolutions adopted by the thirty-ninth annual convention of the American Federation of Labor, which closed its two weeks' session in Atlantic City on June 24:

WHEREAS, The government, with the co-operation of the states, has by a comprehensive program of education, medical treatment and law enforcement demonstrated that the spread of these diseases can be controlled and their ravages reduced; therefore, be it

Resolved, That the American Federation of Labor in convention assembled heartily endorses the efforts of the United States Public Health Service, co-operating with the various states, in combating the spread of venereal diseases; and, be it further

Resolved, That we call upon organized labor to familiarize themselves with the government's program of combating these diseases and to assist in every possible manner the eradication of these scourges of civilization.

I beg to assure you of our desire to co-operate with the Public Health Service in every way possible and practical in its efforts in behalf of the public health and welfare.

Very truly yours,
(Signed) SAMUEL GOMPERS,
President, American Federation of Labor.

* * *

Under its Bureau of Social Hygiene, the California State Board of Health has a division of Social Service under the direction of Mrs. Elizabeth McManus of Los Angeles. Two workers are employed under Mrs. McManus, their duties consisting chiefly in stimulating local interest in rehabilitation and in bringing patients into the clinics. In connection with venereal disease clinics throughout the state, social service workers are employed in the cities of San Francisco, Los Angeles, Oakland, Sacramento, San Diego, Pasadena, San Jose, Santa Barbara, San Bernardino and Fresno. These workers are accomplishing a large amount of work in discovering persons who need treatment and bringing them into the clinics. They are also quietly bringing about the reclamation of many women whose lives might be wasted.

A social service worker in southern California has determined the cost in a southern California county of a defective and delinquent woman and her family. This amounts to no less than \$6,300. The report of this case as submitted by the Social Service worker follows:

At 15 girl eloped to San Francisco with man who promised to marry her. Placed her in house of prostitution, from which she escaped. Man then married her, and both went to hop fields. There he wished her to earn living. She refused and returned to _____ with syphilis, remaining in county hospital two years. Then she eloped with second man, who went through mock ceremony in Arizona. One child born. Man became insane; placed in Patton; later freed, and returned to his wife and children in the East. Woman then married third husband, 66 years old. Two children born. Man died, March, 1918.

January, 1918, all children and woman examined by Dr. Williams, psychologist, Whittier. All children low grade, feeble-minded; woman low grade moron. In May, 1918, woman was urged to go to county hospital for hysterectomy, which finally was done. Woman fair mother; feared by community because part of her nose and cheek eaten away by disease.

Estimated cost to county.

| | |
|---|------------|
| Two years in county hospital at \$2 per day----- | \$1,460 00 |
| Funds provided by county----- | 598 63 |
| Amount needed for care of children until they are 16 years old----- | 4,320 63 |
| | \$6,378 63 |

* * *

Syphilis is the direct cause of perhaps 15 per cent of all insanity; that is, if the individual had not become infected with syphilis, he would never have become insane.

But the rather common supposition that syphilis is also a cause of feeble-mindedness seems to be unproved.

It is true that syphilis and feeble-mindedness are regularly found in the same family, and the same individual; but this contiguity does not prove that the first is the cause of the second.

Feeble-mindedness might better be called, in many cases, the cause of syphilis; since if the individual had been mentally normal he would have avoided a course of life that results in syphilitic infection.

Until much stronger evidence is produced than is now available, it should not be said that syphilis in a parent results in the production of feeble-minded children.

* * *

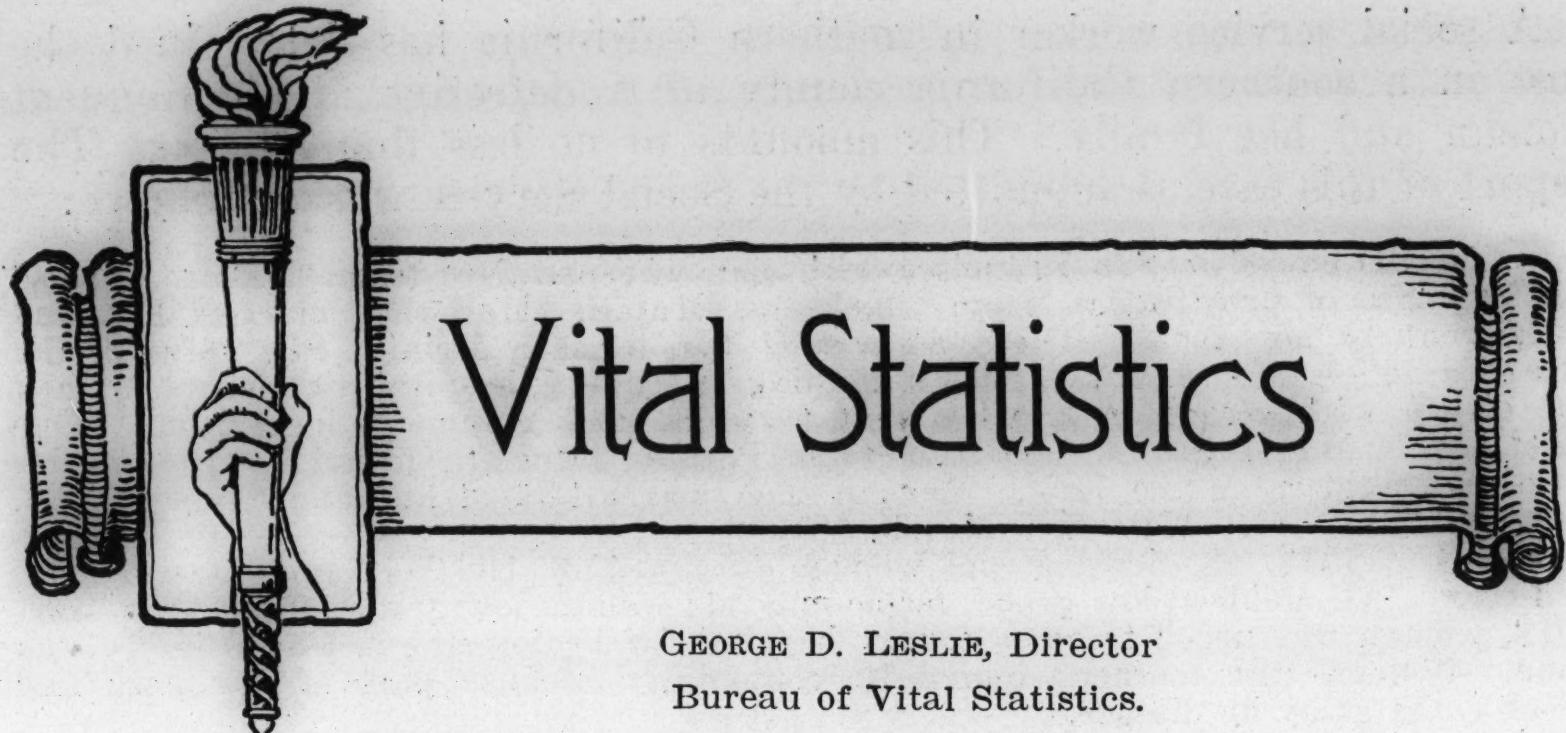
It is usually said that of all the cases of syphilis and gonorrhœa among soldiers, five-sixths were contracted in civilian life and only one-sixth after the men were in uniform.

A careful study of all the new cases of venereal diseases at five large cantonments which the Surgeon General's office has made, shows the army in a still more favorable light.

The cantonments selected were Lee, Virginia, Dix, N. J., Upton, N. Y., Meade, Maryland, and Pike, Arkansas, for the year ending May 21, 1919.

During this year 48,167 cases were treated. It was found that 96 per cent were contracted before entering the army and only 4 per cent after.

Army officials claim that these figures indicate decisively how easy it is to prevent the spread of venereal diseases when a determined effort is made to do so.



GEORGE D. LESLIE, Director
Bureau of Vital Statistics.

Births, Deaths and Marriages for April.*

State, Totals and Annual Rates. The following table shows for California as a whole, the birth, death and marriage totals for the current month of the year to date in comparison with corresponding figures for last year, as well as the annual rates per 1,000 population represented by the totals for the current month and the year to date. The rates are based on an estimated midyear population of 3,221,301 for California in 1919, the estimate having been made by the United States Census Bureau method with slight modifications.

Birth, Death and Marriage Totals, with Annual Rate per 1,000 Population, for Current Month and Year to Date, for California: April.

| Month or period | Total | | Annual rate per 1,000 population, 1919 |
|-------------------|--------|--------|--|
| | 1919 | 1918 | |
| April— | | | |
| Births ----- | 4,377 | 4,565 | 16.8 |
| Deaths ----- | 3,686 | 3,871 | 13.9 |
| Marriages ----- | 2,775 | 2,695 | 10.5 |
| January to April— | | | |
| Births ----- | 17,113 | 17,503 | 16.1 |
| Deaths ----- | 18,689 | 15,083 | 17.6 |
| Marriages ----- | 9,709 | 9,965 | 9.1 |

Length of Residence. The length of residence in California for the 3,686 decedents in April was as follows: Under 1 year, 210, or 5.7 per cent; 1 to 9 years, 714, or 19.4 per cent; 10 years and over, 1,725, or 46.7 per cent; life, 873, or 23.7 per cent; and unknown, 164, or 4.5 per cent.

County Marriage Totals. The counties showing the highest marriage totals for the month were as follows: Los Angeles, 677; San Francisco, 501; Alameda, 276; Orange, 125; San Diego, 118; Sacramento, 101; Santa Clara, 89; San Joaquin, 84; Fresno, 73; San Bernardino, 63; Riverside, 54; Marin, 45; Sonoma, 41; and Kern, 40.

County Birth and Death Totals. Exclusive of stillbirths in both cases, the birth and death totals for the month were as follows for the leading counties, arranged in decreasing order of birth registration:

| County | Births | Deaths | County | Births | Deaths |
|---------------------|--------|--------|----------------------|--------|--------|
| Los Angeles ----- | 1,081 | 1,023 | Contra Costa ----- | 93 | 41 |
| San Francisco ----- | 665 | 660 | San Bernardino ----- | 93 | 83 |
| Alameda ----- | 484 | 338 | Orange ----- | 89 | 64 |
| Sacramento ----- | 167 | 127 | Kern ----- | 81 | 40 |
| Fresno ----- | 150 | 103 | Tulare ----- | 71 | 42 |
| San Diego ----- | 145 | 126 | Riverside ----- | 68 | 46 |
| Santa Clara ----- | 137 | 115 | Sonoma ----- | 62 | 70 |
| San Joaquin ----- | 115 | 101 | Santa Barbara ----- | 55 | 51 |

*The present report is for the month preceding but one. This order must be followed because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the next preceding month is completed.

City Birth and Death Totals. Birth and death totals, exclusive of stillbirths, are presented similarly for the principal California cities below:

| City | Births | Deaths | City | Births | Deaths |
|---------------------|--------|--------|-------------------|--------|--------|
| Los Angeles ----- | 714 | 631 | Long Beach ----- | 49 | 58 |
| San Francisco ----- | 665 | 660 | Bakersfield ----- | 44 | 24 |
| Oakland ----- | 331 | 214 | Pasadena ----- | 42 | 41 |
| Sacramento ----- | 137 | 101 | Alameda ----- | 40 | 17 |
| San Diego ----- | 113 | 84 | Richmond ----- | 40 | 12 |
| Stockton ----- | 75 | 67 | San Jose ----- | 37 | 29 |
| Berkeley ----- | 63 | 40 | Riverside ----- | 32 | 27 |
| Fresno ----- | 58 | 36 | Vallejo ----- | 32 | 21 |

In April there were 672 deaths, or 18.2 per cent, from diseases of the circulatory system; and 523, or 14.2 per cent, from the various forms of tuberculosis.

The deaths from the three leading epidemic diseases (except influenza) were distributed by counties as follows:

| Diphtheria. | Typhoid fever. | Whooping cough. |
|----------------------|----------------|-----------------------|
| Alameda ----- | 3 | Fresno ----- 1 |
| Fresno ----- | 1 | Humboldt ----- 1 |
| Los Angeles ----- | 2 | Sacramento ----- 1 |
| Madera ----- | 1 | San Francisco ----- 3 |
| Riverside ----- | 1 | San Mateo ----- 1 |
| San Bernardino ----- | 1 | Sierra ----- 1 |
| San Diego ----- | 2 | — |
| San Francisco ----- | 3 | 8 |
| Santa Clara ----- | 1 | |
| | — | |
| | 15 | |

Deaths from influenza by counties:

| | | | |
|--------------------|----|-------------------------|---------------------|
| Alameda ----- | 12 | Modoc ----- 1 | Santa Clara ----- 5 |
| Amador ----- | 1 | Monterey ----- 3 | Shasta ----- 1 |
| Colusa ----- | 1 | Orange ----- 5 | Solano ----- 1 |
| Contra Costa ----- | 2 | Plumas ----- 2 | Sonoma ----- 8 |
| Fresno ----- | 22 | Riverside ----- 3 | Stanislaus ----- 1 |
| Humboldt ----- | 2 | Sacramento ----- 2 | Tehama ----- 1 |
| Imperial ----- | 12 | San Benito ----- 1 | Tulare ----- 8 |
| Kern ----- | 5 | San Bernardino ----- 4 | Ventura ----- 4 |
| Kings ----- | 6 | San Diego ----- 9 | Yolo ----- 1 |
| Lassen ----- | 6 | San Francisco ----- 48 | Yuba ----- 1 |
| Los Angeles ----- | 70 | San Joaquin ----- 5 | — |
| Madera ----- | 1 | San Luis Obispo ----- 5 | 263 |
| Mendocino ----- | 2 | Santa Barbara ----- 2 | |

Sex, Race and Nativity. The proportion of the sexes among the 3,686 decedents in April was: Male, 2,210, or 60.0 per cent; and female, 1,477, or 40.0 per cent.

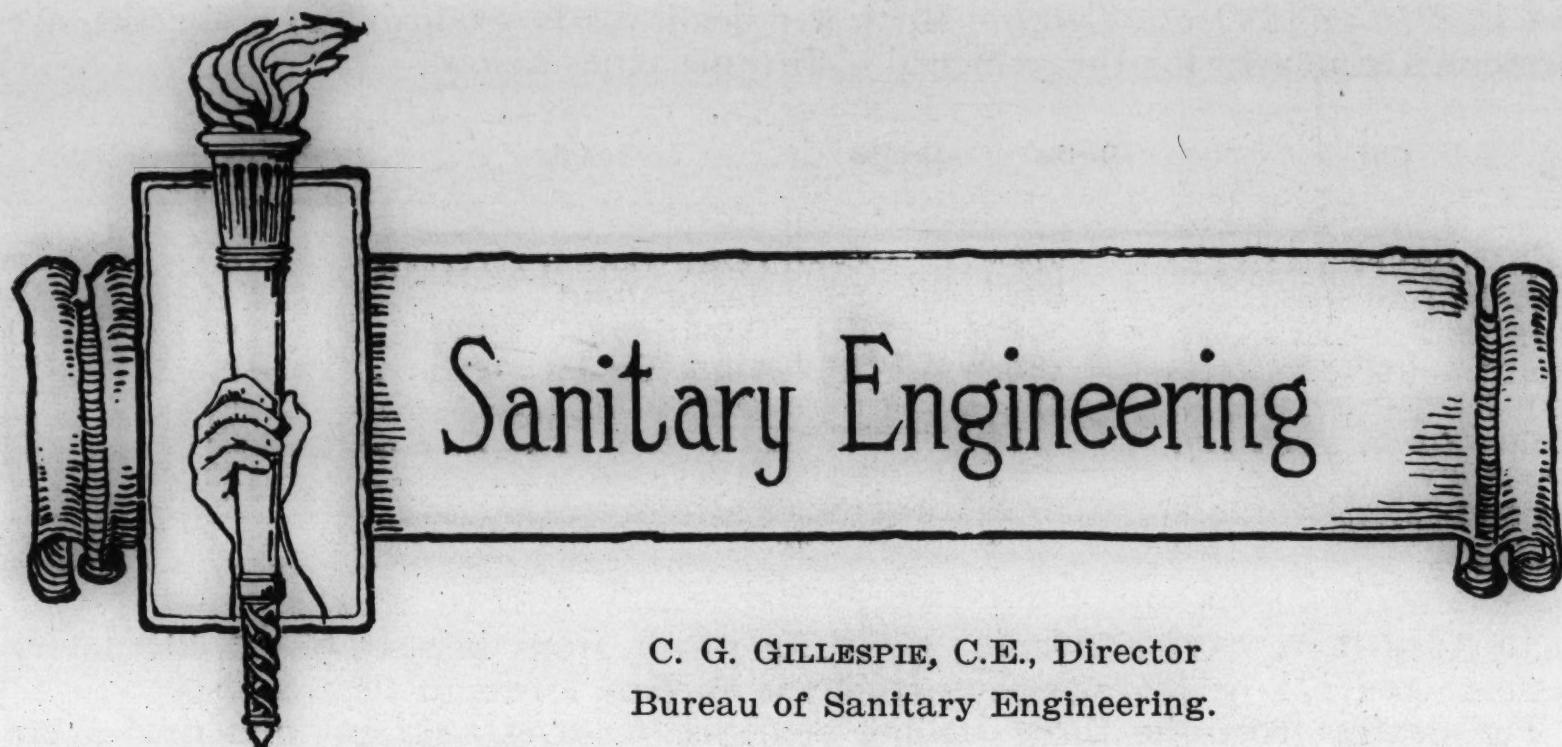
The race distribution of decedents was: White, 3,454, or 96.4 per cent; Japanese, 80; Chinese, 72; Negro, 63; and Indian, 17.

The 3,454 white decedents were classified by nativity as follows: California, 811, or 23.4 per cent; other states, 1,475, or 42.7 per cent; foreign, 1,083, or 31.4 per cent; and unknown, 85, or 2.5 per cent.

Infant Mortality. There were 293 deaths for children under 1 year, which were distributed by age in months as follows: Under 1 month, 146, or 49.8 per cent; 1 to 2 months, 38, or 13.0 per cent; 3 to 5 months, 58, or 19.8 per cent; and 6 to 11 months, 51, or 17.4 per cent.

In certain cities the deaths under 1 year were as follows: San Francisco, 43; Los Angeles, 38; and Oakland, 22.

The 293 deaths under 1 year in a comparison with the 4,377 live births reported for the month, show an infant mortality ratio of 66 per 1,000 births.



C. G. GILLESPIE, C.E., Director
Bureau of Sanitary Engineering.

The newly incorporated town of Calipatria is preparing plans for a sewage disposal system. The probable outlet to this system will be in the New River at a point about four miles northwest of the city. Ample dilution is afforded by the stream. Partial clarification by settling is planned.

The Bureau of Sanitary Engineering is making a test of ocean water in the vicinity of the sewer outlet near Santa Monica in order to determine how great a health menace to bathers this outlet may constitute.

During May, at the request of the Mayor of Stockton, an inspection of sewerage conditions in the southern part of Stockton was made. Sewage is pumped into Mormon Slough about three miles from the San Joaquin River. The inspection revealed large deposits of sludge on the banks of the slough as well as septic action in the water. There is practically no current in the slough so that it acts as a huge septic tank. There is a distinct odor nuisance even at a considerable distance from the slough. Meanwhile a plant for the disposal of sewage has been practically completed on the northerly side of the city. When this new plant becomes operative 50 per cent of the sewage now entering Mormon Slough will be diverted to the northern plant and from there directly to the San Joaquin River. This will provide relief in the matter of the disposal of sewage from the city of Stockton.

The City Engineer of Los Gatos submitted to the Director of the Bureau of Sanitary Engineering several propositions for the better sewerage and sewage disposal for the southern part of the city, one of which propositions received the approval of the Bureau. By this plan sewage will be carried across Los Gatos Creek on a low concrete dam, then pumped into the main on the line leading to the main disposal works. The effluents from the Imhoff tank now in operation is disposed of on sediment bottom land which is one of the best sewer farms recently inspected by the Bureau.

Bacteriological and chemical examinations of water constitute a large part of the work undertaken by the Bureau of Sanitary Engineering. During May, in the office of the Bureau at Berkeley, 381 bacteriological examinations of water were made and 401 chemical examinations of water (partial) were made. During the same month 14 bacteriological examinations of sewage were performed. In the Los Angeles office of the Bureau 99 bacteriological examinations of water were made and 99 (partial) chemical examinations were performed.

The Bureau is distributing to health officers and is posting throughout the state posters which read as follows:

WARNING.

Leave your camp as you would like to find it. Burn or bury all refuse. Keep the pleasure grounds of America clean.

CALIFORNIA STATE BOARD OF HEALTH.

DANGER.

Do not drink this water without boiling it.

CALIFORNIA STATE BOARD OF HEALTH.

DANGER.

This water is unsafe. Do not drink it.

CALIFORNIA STATE BOARD OF HEALTH.

WARNING TO CAMPERS.

This is an insanitary camp. You are urged to go elsewhere.
"Keep the pleasure grounds of America clean."

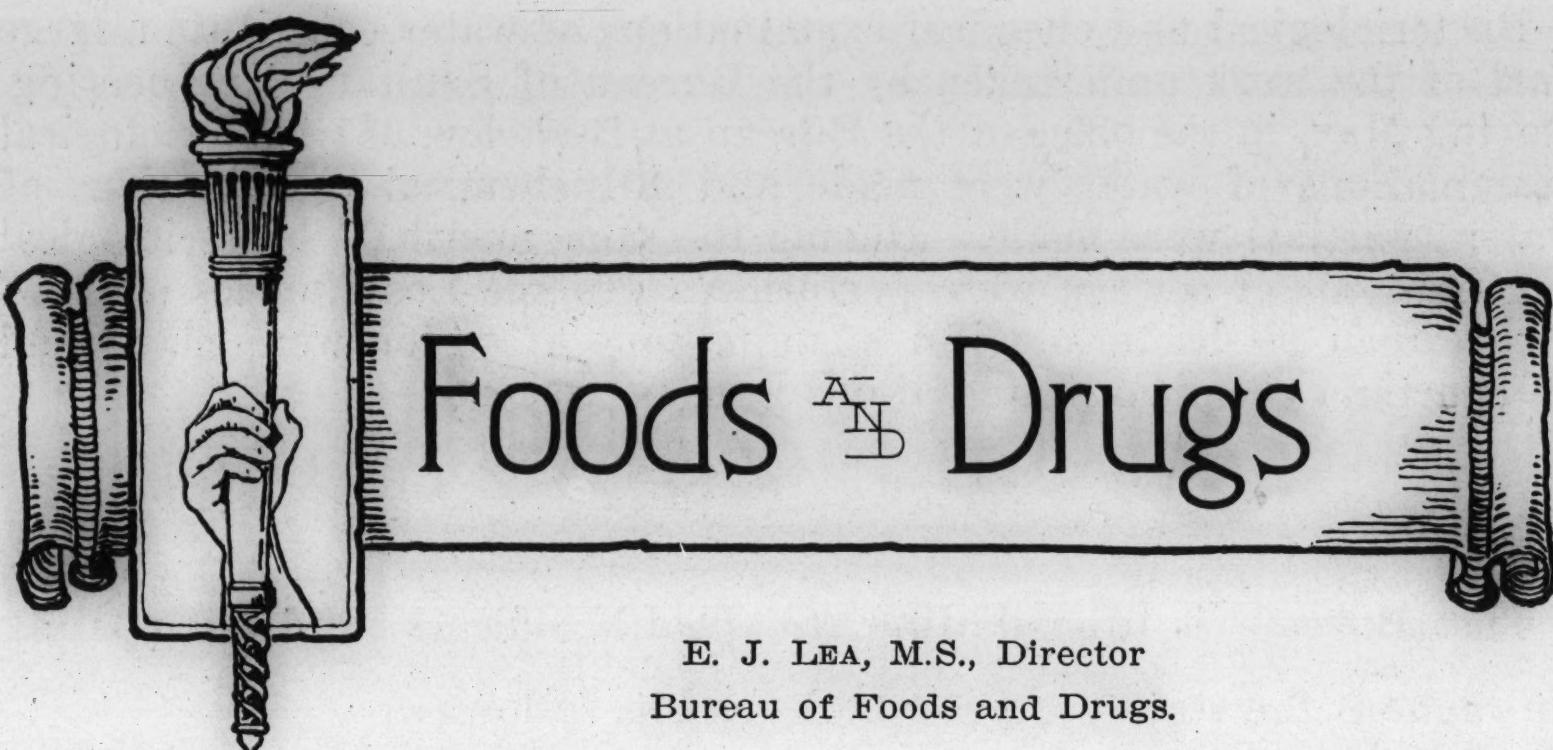
CALIFORNIA STATE BOARD OF HEALTH.

BEWARE OF ARREST.

It is unlawful to pollute lakes, streams, or watersheds. Bury all refuse at a distance from streams or lakes.

**IT IS DANGEROUS TO DRINK WATER WHOSE PURITY IS
IN DOUBT, EXCEPT AFTER BOILING IT.**

CALIFORNIA STATE BOARD OF HEALTH.



E. J. LEA, M.S., Director
Bureau of Foods and Drugs.

A large variety of food samples were analyzed in the Bureau of Foods and Drugs during the month of May. These samples consisted of buttermilk, cheese, cream, coffee, confectionery, fruits, gelatine, ginger ale, ice cream, lemon soda, liquors, marshmallow creme, meats, milk, noodles, olive oil, olives, oysters, syrups, shrimps, tomato products, walnut meats and canned vegetables. The drugs consisted of camphorated oil, Dander-Go, Duffy's Solution, hair tonic, and mineral water.

* * *

All food products used in state institutions are examined by the Bureau of Foods and Drugs. During May the state institutions submitted samples of baking soda, butter substitute, catsup, coffee, cream tartar substitute, farina, flour, fruits, macaroni, salad oil, prunes, puree, oatmeal, rice, rolled wheat, spaghetti, spices, syrup, tea, and canned vegetables.

* * *

CASES REFERRED TO THE DISTRICT ATTORNEYS.

The following cases were referred to the district attorneys for prosecution at the May meeting of the State Board of Health:

Artesia—Niemes & Klarer, acetyl salicylic acid.

Brawley—Manahan & Gillespie, pork sausage and chopped meat.

Calexico—Calexico Meat Market, chopped meat; International Meat Market, chopped meat.

El Centro—N. V. Barbarick, chopped meat; W. L. Birch, chopped meat and pork sausage; John E. Davis, camphorated oil; Howze & Gomes, chopped meat and pork sausage; McLane Slaughtering Co., chopped meat and pork sausage.

Glendale—C. C. Ehrenhart, chopped meat.

Holtville—Pacific Land and Cattle Company, chopped meat and pork sausage.

Imperial—Mayor's Imperial Market, chopped meat and pork sausage; Waite's Market, chopped meat.

Long Beach—R. H. Stollar, fancy syrup.

Los Angeles—Aliso Pharmacy, camphorated oil and citrate of magnesia; Casner Market Company, chopped meat; Hidalgo's Pharmacy, citrate of magnesia; Jedofsky & Oder, prepared mustard; Hurth's Bakery, walnut meats; Richert Bros., extract of lemon; Ridgway's Pharmacy, tincture of iodine.

Oakland—California Cafe, catsup; George C. Clement, essence of peppermint; McNamee & Nylander, incubator eggs.

Pasadena—John Briner, chopped meat; J. W. Martin, chopped meat; J. E. Mulvihill, chopped meat.

Sacramento—Travelers Hotel, maple syrup and cream.

San Francisco—Beck's Pharmacy, argyrol; N. Botto & Co., frozen oranges; Reed Pickle Works, catsup; A. Stratton, prunes; Union Rice Mills, coated rice; O. Vannucci & Co., frozen oranges.

San Jose—Black's Package Store, oranges and prunes; Eastern Fruit Market, prunes; Greco Canning Company, De Luxe tomato sauce (referred on 16 counts).

Santa Rosa—Belden & Upp, citrate of magnesia.

Vallejo—C. F. Green, coffee.

CONVICTIONS UNDER FOODS AND DRUGS ACTS REPORTED DURING MAY, 1919.

Los Angeles—Jedofsky & Oder, prepared mustard, mislabeled, fined \$5; Casner Market, chopped meat, adulterated, fined \$25; R. C. Kerntoff, camphorated oil, below standard, fined \$25; G. Salazar, citrate of magnesia, substitution, fined \$30.

Oakland—N. Forcellino, tomato paste, adulterated, fined \$20; Palace Bakery, incubator eggs, rotten, fined \$5; McNamee & Nylander, incubator eggs, rotten, fined \$25; White Lunch, milk, below standard, fined \$10; Jersey Milk, Cream and Butter Company, milk, below standard, fined \$10; M. Kohn & Sons, prunes, rain damaged, fined \$5.

Richmond—C. Barbikas, raspberry syrup, mislabeled, fined \$10; C. Barbikas, pineapple syrup, mislabeled, fined \$10; C. Barbikas, chocolates, mislabeled, fined \$10; John M. Brooks, whisky, substitution, fined \$10; M. C. Lucy, whisky, substitution, fined \$10; Louis Miller, milk, below standard, fined \$20.

San Francisco—M. Barsotti, prunes, rain damaged, guilty, O.R. six months; A. Carbonari, conserva, adulterated, guilty, O.R. six months; Wm. Hunt Company, gin, substitution, guilty, O.R.; Italian-American Canning Company, canned olives, swells, fined \$50; Apple Blossom, walnuts, rancid, fined \$5; Apple Blossom, butter, rancid, fined \$5; Hunt, Hatch Company, oranges, frozen, guilty, O.R. six months; Parducci & Menconi, conserva, guilty, O.R. six months; Roy T. Bauer, Dander-Go, mislabeled, fined \$50; F. R. Weisgerber, whisky, substitution, fined \$5; A. A. Shaw, below standard, fined \$25; Campodonico, Lemos & Hanscom, oranges, frozen, guilty, O.R. sixty days; Half Moon Commission and Produce Company, oranges, frozen, guilty, six months.

San Jose—J. C. Bonde, prunes, rain damaged, fined \$5; San Jose Fruit Evaporation Company, evaporated apples, fined \$75.

Santa Clara—Anthony Greco, tomato sauce, adulterated and mislabeled, fined \$50.

Venice—Bay City Market, chopped meat, fined \$25; John Schwab, chopped meat, fined \$50.

ARTICLES CONDEMNED DURING MAY, 1919.

Catsup—116 gallons, decomposed, Los Angeles; 8 bottles, moldy, Oakland; 252,679 pounds, decomposed and moldy, San Jose; 1,220 gallons, Wilmington.

Cheese—3,175 pounds, decomposed, San Francisco.

Cocoanut—2,600 pounds, rancid, San Francisco.

Gelatine—487 pounds, adulterated, San Francisco.

Mushrooms—50 pounds, wormy, San Francisco.

Oranges—500 boxes, frozen, San Francisco.

Prunes—1,800 pounds, rain damaged, Salinas; 500 pounds, moldy, San Jose; 122,127 pounds, rain damaged, San Francisco.

Sausages—25 pounds, putrid, Healdsburg.

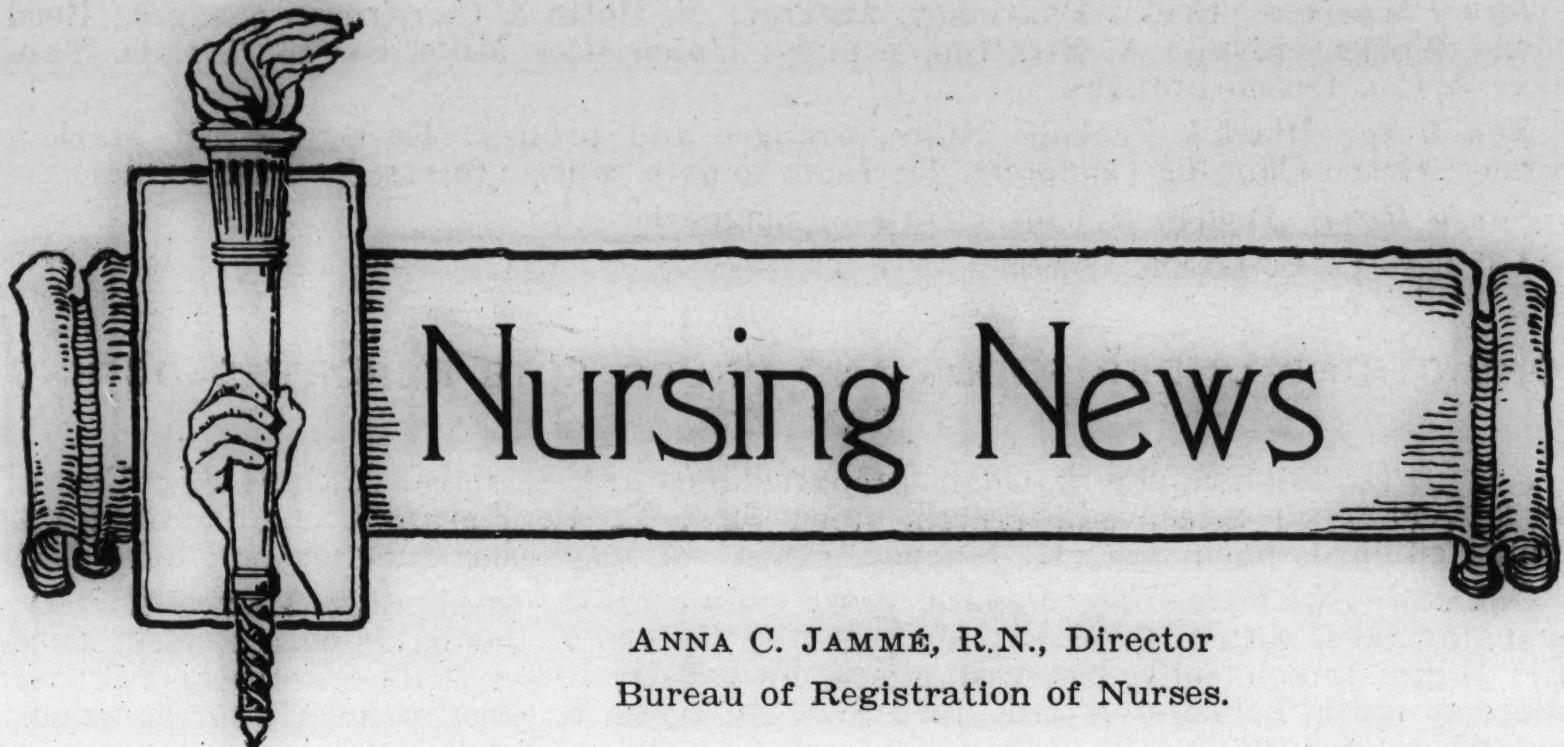
Sausage Casings—18 pounds, rancid, Healdsburg.

Tomato Paste—90 pounds, Oakland; 4,200 tins, decomposed, Healdsburg.

Tomato Puree—5,954 tins, decomposed, Healdsburg; 39,000 pounds, adulterated and mislabeled, San Francisco; 4,515 gallons, adulterated and mislabeled, Wilmington.

Tomato Sauce—247 pounds, adulterated and mislabeled, Alameda.

Walnut Meats—40 pounds, rancid, San Francisco; 20,257 pounds, rancid, Los Angeles.



Nursing News

ANNA C. JAMMÉ, R.N., Director
Bureau of Registration of Nurses.

REQUIREMENTS FOR ENTRANCE TO SCHOOLS OF NURSING CHANGED.

It has been necessary to consider certain changes in educational requirements for entrance to schools of nursing incident to the cessation of the war and the emergency which existed during the war for an increase in the output of nurses.

The State Board of Health, therefore, on May 3 established the following requirements for entrance to schools of nursing:

1. Applicants over eighteen years of age who present credentials showing four years' work in a high school, or beyond high school, or from other institutions of secondary grade accredited to a college, or university, may be certified for entrance to schools of nursing.
2. Applicants over eighteen years of age who have not completed four years' high school course, but who present satisfactory credits in English, arithmetic, chemistry, cooking, or in other subjects that may be considered of equivalent value, may be certified for entrance to a school of nursing.
3. Any applicant over twenty years of age who can show to the satisfaction of the Bureau of Registration of Nurses a training which in the opinion of the Bureau is sufficient preparation for entrance to a training school, may be certified without further examination.
4. Certification with Credit. High school graduates presenting satisfactory credits in the following subjects will be accepted. Credit for this work on the general course in a school of nursing will be allowed, not to exceed three months.
Chemistry: (a) Inorganic; (b) Organic.
Chemistry of Foods and Nutrition.
Cooking.
Dietetics.
Biology (when dealing with the lower forms of life and cellular structure).

5. On presentation of satisfactory credits in the following subjects, taken in an accredited institution of higher grade than the high school, credit will be allowed on the general course in a school of nursing, not to exceed twelve months:

| | | |
|-----------|--------------|-----------|
| Anatomy | Physiology | Zoology |
| Chemistry | Bacteriology | Dietetics |
| Biology | Hygiene | Physics |

6. On presentation of satisfactory credentials, showing work pursued in another accredited school of nursing, credit will be allowed, not to exceed twenty-four months on the general course.

INSPECTIONS IN SOUTHERN DIVISION.

During the month of May inspections of schools of nursing in connection with the following hospitals were made by the Assistant Inspector of Schools of Nursing:

Santa Ana Hospital.
Pomona Valley Hospital.
Children's Hospital, Los Angeles.
St. Vincent's Hospital, Los Angeles.
Riverside City Hospital.

In the early part of April there were two conferences in Los Angeles on the standardization of hospitals, the work being taken up from three angles. First, providing and keeping on file adequate case records. Second, provision for laboratory facilities. Third, provision for a staff to pass on the eligibility of surgeons to operate in a hospital.

At the present time the beginning of such a system of standardization has been in operation for a month or more at St. Vincent's Hospital, Los Angeles. A room for the permanent filing of case records is being constructed with an adequate filing system. This includes complete history records and a card for follow-up work. Laboratory work in connection with this is in charge of two salaried physicians and reports of findings are filed with the records. The third point, the consideration of the eligibility of surgeons who desire to operate in this hospital, is also met by the appointing of a group of men whose duty this is.

Efforts toward improving living conditions for the pupil nurses at Riverside City Hospital have met with unexpected success. Funds have been given to the hospital for the erection of a nurses' home, by Mrs. Charles Loring of Minneapolis, in grateful appreciation of past care given at the hospital. The home will be known as the Florence Barton Loring Nurses' Home. Construction will begin very shortly, as plans are now completed. The building will be of reinforced concrete, built on one floor surrounding a court. It will be steam heated throughout and provided with gas and electric lights. The floors will be of hard wood and the building attractively furnished. There will be provided, in addition to the sleeping quarters, a reception room, diet kitchen, laundry and trunk room. The bath rooms will be equipped with showers and complete in every way. Provision will be made for outdoor as well as indoor sleeping for every pupil, as there will be two large sleeping porches, each accommodating nine pupils. These porches will open on the patio and will give plenty of fresh air as well as being quiet. It is the intention to add recreation facilities, such as tennis courts, as soon as feasible.

CALIFORNIA STATE BOARD OF HEALTH

MONTHLY BULLETIN

Vol. 15

JULY, 1919

No. 1

TABLE OF CONTENTS.

| | Page. |
|--|-------|
| OCCURRENCE OF MALARIA AND ANOPHELINE MOSQUITOES IN NORTHERN CALIFORNIA, by Wm. B. Herms, Consulting Entomologist, State Board of Health----- | 1 |
| THE HEALTHY WORKER FIGHTS DISEASE----- | 9 |
| THE MILK CONSUMER'S RESPONSIBILITY----- | 10 |
| THE CHILD'S HANDICAP----- | 11 |
| FACTS ABOUT CANCER----- | 11 |
| TEN SUGGESTIONS FOR MILK CONSUMERS----- | 12 |
| HOT WEATHER AND BABIES----- | 12 |
| PRESS CLIPPINGS----- | 13 |
| THE DISAGREEABLE PAGE----- | 15 |
| EDITORIAL ----- | 16 |
| NEWS NOTES FROM THE BOARD'S BUREAUS: | |
| Communicable diseases ----- | 18 |
| Tuberculosis ----- | 20 |
| Social Hygiene ----- | 22 |
| Vital Statistics ----- | 24 |
| Sanitary Engineering ----- | 26 |
| Foods and Drugs----- | 28 |
| Registration of Nurses----- | 30 |

SPECIAL BULLETINS PUBLISHED BY THE CALIFORNIA STATE BOARD OF HEALTH.

- No. 3. Rabies (Regulations).
- No. 5. Diphtheria (Regulations).
- No. 6. Typhoid Fever (Regulations).
- No. 8. Sewage Disposal for Isolated Residences.
- No. 9. Malaria (Regulations).
- No. 10. Sanitation in the Mountains.
- No. 11. Tuberculosis (Regulations).
- No. 12. Hookworm (Regulations).
- No. 13. The Production of Pure Milk.
- No. 14. Rural Sanitation.
- No. 15. Poliomyelitis (Regulations).
- No. 16. Sanitation and Sewage Disposal in Rural School Districts.
- No. 17. Typhus Fever (Regulations).
- No. 18. Sewage Systems and Sewage Disposal Works.
- No. 19. Scarlet Fever (Regulations).
- No. 20. Flies.
- No. 21. Dental Hygiene.
- No. 22. Ventilation Standards for Schools.
- No. 23. Destruction of Ground Squirrels and Rats.
- No. 24. Syphilis and Gonococcus Infections (Regulations).